Apple's data centre before I was intercepted by security guards

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There's nothing fluffy about the heavily guarded, coal-guzzling facility where Apple keeps users' data. A wary **Mark Harris** tries to pay a surprise visit

you know where ur most treasured mation is stored and photographs and videos of vour friends and family? You may think it is securely held on the phone in your pocket or the tablet in your bag, but if you have the latest iPhone or if you've upgraded the software on your Apple device – phone, tablet or music player – to iOS 5, then it is 4,000 miles away, being watched over by someone vou've never met. Welcome to Maiden, North

Carolina, population 3,310. A tiny town on the edge of the Appalachian mountains, with an abundance of cheap electricity from the local coal industry. Maiden is home to the iCloud. When Steve Jobs announced the concept last year, a few months before his death in October, you could have been forgiven for thinking it was a mass of data floating on the edge of space.

In fact, the iCloud is not only solid but it's big and dirty, housed in banks of whirring hard drives enclosed in a giant air-conditioned building the size of an aeroplane factory. Codenamed Project Dolphin, the \$1 billion installation is home to the computers that hold billions of emails, photos, songs and videos uploaded from millions of iPhones and iPads around the world.

When a customer runs iOS 5 for the first time, they will be asked whether they want to use iCloud. The vast majority of users will say yes, and their data previously backed up only on their own computer, if at all — will be sent to Apple's data centre. The company says this frees your device from having to be synched to a Mac or PC. Owners of multiple Apple devices can sync them all to a single online profile held in the centre; lose your iPad and you can "imprint" your profile and data on to a new device, no wires needed.

The service is a success with users, if Apple's latest financial results are any guide. Last week the company announced a record net profit of \$13 billion for the last three months of 2011, the fruits of selling 37m iPhones and 15.4m from ground level. iPads — nearly all of which

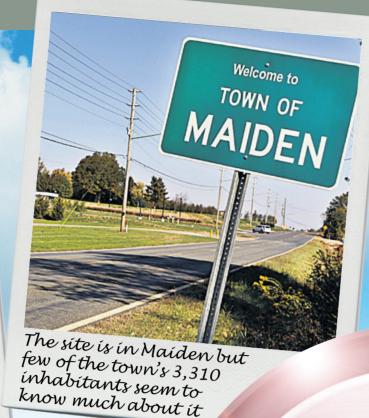
will be signed up to iCloud. Apple's 183-acre North Carolina compound is so vast that it has its own electricity substation and water treatment plant. There's even a purposebuilt fire and ambulance station just outside the perimeter.

When you arrive in Maider - motto: "A great place to call home" — you are assured of a

friendly welcome at Scotties Bar-B-Que or Piedmont Hardware. The same can't be said for Apple's data centre Hidden from prying eyes, the structure has as its first line of defence a buffer zone of high earth banks set back 75ft from roads and neighbouring properties, topped with fast-growing trees. These make it impossible to see the facility

If you were able to scale these bunds without being spotted, you would soon come to a brightly lit, 100ft wide clear zone. No trees or shrubs are planted in this area, so that guards and cameras inside have a clear view of anv intruders. Beyond the clear zone is 7ft-high security fencing, with cameras and floodlights mounted on poles

A buffer zone of earth The Apple plant A 7ft fence surrounds the facility; outside it is a brightly lit clear zone An array of fans cools own the racks of servers Just 90 staff parking spaces are provided - a measure of how small a The centre has its own Phase 2 will double the electricity size of the facility to substation close to 1m square feet



Work has already

started on phase 2 and a rumoured solar power plant



Drive carefully!

A guardhouse with floodlights, steel bollards and tyre shredders greets visitors

> Millar of the Catawba county economic development corporation, the organisation that persuaded Apple to come to Maiden in the first place.

[at the data centre]," he says. "And I've been no further inside than the front door." What Millar can share, though, is the architect's plan of

"I'm fairly close with the guys

as its Californian surfer dude the North Carolina compound. It image suggests. reveals a breathtaking level of security, even for a company bought and the expectation is that once kept a prototype of the that it will be something solar. iPad chained to a desk in a says Millar. "But I can't say locked room at its Californian any more." chapel set in green fields at the

The data centre is a massive 500,000 sq ft structure, next to a levelled area where construction not available), it will make this

Maiden's folksy appeal or even the beautifully tended greens of the nearby Glen Oaks Golf Club that drew Apple.

reason the company came here is the cost of electricity," he admits. Apple's data centre is estimated to need up to 100MW of electricity — the same as 200,000 UK homes — and prices in Maiden are a fraction of those in Silicon Valley.

According to Greenpeace North Carolina's electricity is also some of the dirtiest in America, generated mostly by coal from the nearby Appalachian seams. The environmental charity notes that Apple currently takes less than 7% of its power from

**DON'T PANIC** 

Your tech queries answered by Nigel Powell

As I type emails on my Windows laptop, the cursor jumps all over the screen and sometimes wanders off it altogether Could I be brushing the touchpad with my sleeve?

The "touchpad twitch" you describe should get its own Wikipedia entry, it's such a common problem. Touchpads are a boon to laptop owners who aren't able to use a mouse but, as manufacturers keep increasing the pad's area and sensitivity, they increase the risk of what you think is happening: brushing it with your sleeve or arm. This can be a real annoyance, especiall to fast typists who are continually brought up short by the effect.

Fortunately there is a simple solution. Go to touchpad-blocker.com to download and install the free Touchpad Blocker program. This lets you disable the touchpad while you type then turn it back on using a control-key sequence of your choice — much easier than

having to delve into the laptop's settings to achieve the same effect. It's simple and it

I have digital CCTV that records in .264 format. I'd like to convert videos format, such as .mpg or .avi. Can you help?

CM, via email

Let's get the jargon out of the way first: H.264 is a high-definition video format also known as MPEG-4 AVC. To convert it to .avi, to pick one of the many alternatives I recommend you install the Freemake Video Converter program (free from



freemake.com). It's fast, flexible and easy to use. The software is capable of converting your H.264 files into a variety of formats, including ones that will play on a mobile phone or a DVD, and ones that are

suitable for uploading to

YouTube.

Mhen I try to open PDF to emails, I get an error message saying "A font contains a bad CMap/ Encoding". What can I do? HRC, via email

This error occurs when you try to use an old PDF reader program to open a recently made document. You need to upgrade the copy of Adobe Acrobat Reader that is already on your computer, by downloading the latest version from adobe.com/reader. Once this free upgrade has been installed, the problem will

**Email vour tech** queries to dontpanic@ sunday-times.co.uk

## **iPHONE GAMING**

**SOULCALIBUR** £7.99. Age 9

> SoulCalibur, a martial arts beat-'em-up, made its debut on Sega's Dreamcast way back in 1999 and has appeared on most consoles since. Now it's available for iPhone and iPad, and while it's one of the most expensive games to go into the App Store — even this price includes a 20% "launch discount" — there is still a lot to love. Fans of the franchise will welcome the

return of the 19 characters from the original game, and the choice of ways to fight ranges from Arcade Battle (classic, one-on-one fights) to Time Attack (win as quickly as you can) and Survival (limited life). It still looks spiffing, and the translation of the controls to the touchscreen has been handled deftly



TRIPLE TOWN Free. Age 4

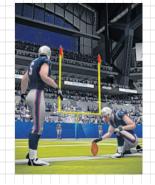
Triple Town has been a popular game on Facebook for some time now but its iPhone and iPad version is such a success that it feels like it could have been made for mobile devices from the start. The gameplay is straightforward: plant items such as trees and grass on a simple grid and, when you have got three in a row. they will merge to form a single, higher-value object.

Before you know it you're building houses and churches — assuming you can avoid attacks by giant bears. The format is perfect for playing in short bursts; that said, prepare to lose hours to this fearsomely addictive title (also available for Android)

## **NFL FLICK KICKER**

★★★☆ 69p. Age 4

With the Super Bowl taking place next weekend, now is the time to get an American football game on your iPhone or iPad. NFL Flick Kicker ignores the more arcane aspects of the sport in favour of its most familiar element: wellying field goals and punts from all around the pitch, following in the boot-steps of the same developer's excellent Flick Kick Football, Official NFL licensing means that the game features proper kits for all 32 teams in the league, while the presentation is console slick. The gameplay, meanwhile, is just right, with the finely tuned controls letting you aim your kicks against the wind. Stuart Dredge



at intervals of 75ft. And that's

before you even get to the data

centre itself. The approach road ends at a mirrored gatehouse, where further progress is blocked by a system of rising gates, descending bollards and viciously sharp tyre shredders. A battery of CCTV cameras watches every angle of approach

A guard slowly copies down my licence plate. "Don't plan on getting in," he mutters before etreating inside with my driving licence. Then I wait. And wait. After 20 minutes he hands me back my ID and directs me sternly to the "Rejected vehicles" lane.

In a gesture that seems a little lame in hindsight. I smile and show him my iPhone and iPad "I'm a customer," I say. He doesn't blink or budge

So I go instead to see Scott

on Project Dolphin's twin is set Painter is pastor of the Cedar to begin. When the second phase Grove Baptist Church. is complete (details of which are

> site one of the biggest installations of its kind on the Millar admits it was not

"Despite our charm, the real

renewable sources — the lowest

"Around here, everybody knows everything about everybody - except Apple," the pastor says, nervously eveing his neighbour. "They keep an eye on

everything," he says, ushering me to the church's car park. "It won't be long until someone comes round to see what's going on."

Sure enough, within minutes

rate of any big cloud-computing

That may change if local

rumours — that a solar power

station is being built near

Apple's complex — are true.

A 70-acre site has been acquired

Millar, and Apple has been stung

by the company, according to

by claims that it isn't as green

"It is land that Apple has

As I'm leaving, I notice a tiny

edge of the data centre and its

miles of security fencing, Brad

an unmarked white 4x4 rolls up quietly to the edge of Apple's roperty, its occupants hidden behind tinted windows. It shadows me until I reach the highway. Of course, there are reasons to be encouraged by thi level of security. The data Apple is protecting are yours and mine after all. Somehow, though, it's all a little too like The X Files. Or my way to the airport I reach to turn off the GPS tracking on my iPhone, and then scold myself for being paranoid. No one from

Apple would be interested in

tracking me, even if it were

possible. Would they?