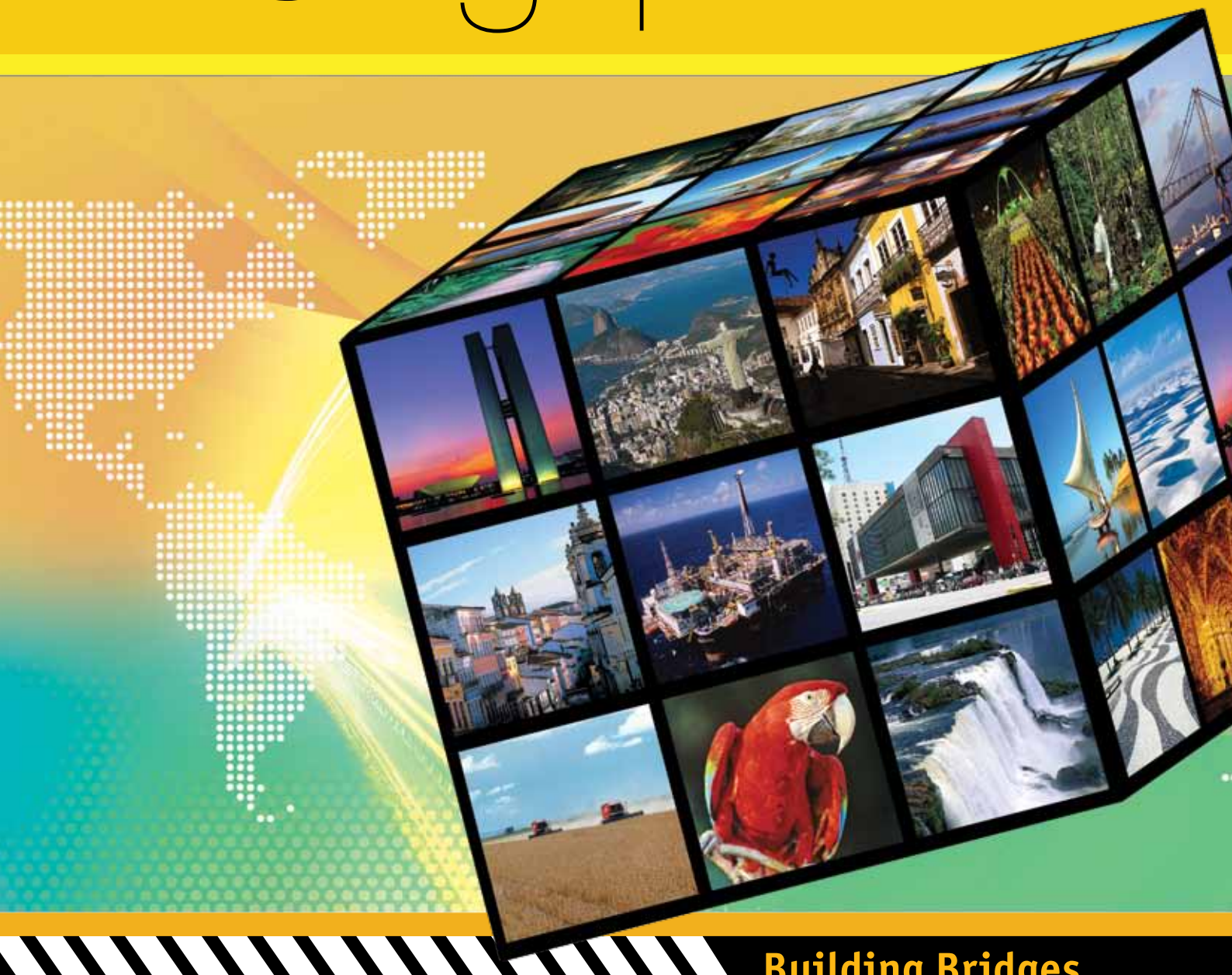
2009 / 2010

It's time for Brazil in Singapore



Building Bridges toward Development

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Foreword

When I first arrived in Singapore, four months ago, Tânia, came to the airport to pick me up and gave me an envelope, saying, "This is your most important project from now on: to produce the next edition of the Embassy's magazine, the Ambassador's most beloved venture."

Not only that, I was supposed to continue Tatiana's job, which would be a difficult task when substituting such a competent and organised person. It was Tatiana's organisational skills that made my job easier, not only when compiling the new edition of this magazine, but also as the new head of the Trade Promotion Sector. I always resort to her archives and, when in doubt, I always read the magazine, looking for suggestions on how to proceed and for guidance on the road to follow.

The production of this new edition, however, was a group job. All the people from the Embassy provided some piece of information or suggestion to achieve the final result. The Ambassador, with his supervision and many different ideas; the team of the Trade Section, Carlos and Tânia, who helped to write some of the articles and to manage the whole production; the people from the Consular Section; and also the people from the administration, who helped with the recipe presented in the gastronomy section, the picture of which was delivered straight from Brazil by Malu's brother, in charge of taking the picture and, after that, savouring the "muqueca". I also have to thank the people from Sun Media: Nomita, Dilip and Neha, who had sleepless nights as the time to publish the magazine grew close. I am indebted to all of them, for whom I have developed great admiration since I arrived in Singapore.

Herbert Drummond
Head of Trade

This edition of the magazine will present some important case studies of Brazilian companies in Singapore and also Singaporean companies in Brazil. The tourism section will cross Brazil from North to South, ranging from Manaus to the Iguassu Falls and passing through historical cities and beautiful beaches. We have also shown some Brazilians who are performing an amazing job in Singapore, such as Dr. Marco Corrêa and Professor Antônio Hélio, or Brazilian artists who have contributed to divulge Brazil in Singapore, such as Romero Brito and BossaCucaNova. That is just a glimpse of what is to come.

I hope this magazine can contribute to increase the curiosity about Brazil and to help in promoting and broadening the relations between Brazil and Singapore.

Enjoy the reading!

MICA (P)008/10/2009

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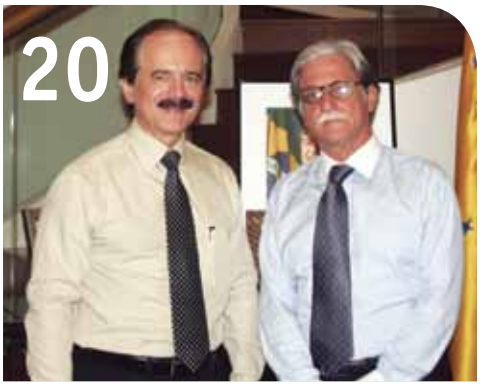

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- MINISTER PEDRO BRITO, Page 14

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"The 2016 Olympic Games to be held in Rio should require US$50 billion in private and public investment, an opportunity that Singapore should not miss."

BRAZIL AND SINGAPORE : IMPROVING THE QUALITY OF OUR RELATIONSHIP 30 YEARS ON

During this complex and eventful year, we have been proudly celebrating the 30th anniversary of the establishment of the Embassy of Brazil in Singapore

All along these thirty years, Brazil has been gradually, but steadfastly, developing a solid relationship with Singapore. Strengthening our ties, improving the quality of our exchange in a multiplicity of areas: political, economic, commercial, financial, cultural and technological. But above all, we have been striving to approach this very unique island-state with our very special Brazilian way of being, with lots of tropical energy, a very big, warm heart and arms wide open to our Singaporean citizens. And our friendship has been pretty well reciprocated, I must say.

Nowadays, Singaporeans and Brazilians can see each other and say that they are increasingly becoming much more aware of each other, much more knowledgeable about each other's economy , much more curious and interested in each other's culture and each other's own country than only a few years ago.

And, for that matter, 2009 has been witnessing quite a remarkable improvement in that direction. Actually, since early in 2008, when the Brazilian Minister of External Relations, Ambassador Celso Amorim, visited Singapore for the first time, we have been experiencing mutually stimulating actions on different fronts, which are strongly being reinforced all along this year.

Brazilian government missions representing the main infrastructure sectors of the economy, such as ports and airports, urban transport, from the industries of oil and gas, from the renewable energy and environmental areas, have all been visiting Singapore in 2009. In addition, governors and executives from the Brazilian states of Rio de Janeiro, Minas Gerais, Santa Catarina, Mato Grosso, Espírito Santo and Amazonas have come, or are schedulled to come very soon, to the Singaporean shores.

Ambassador **Paulo Alberto Soares**

At the same pace, Singaporean government missions and groups of private and public enterprises have, likewise, been visiting Brazil cities from north to south this year.

Moreover, I have a feeling that the people, themselves, are spontaneously getting closer to each other—maybe as a result of the global village we live in, who knows? More probably, it is because the quality of our relations has certainly been improving along the years.

On the economic and commercial front, Singapore remains Brazil's largest trade partner in Southeast Asia and the second largest Asian investor in Brazil. The opening of an office in São Paulo by Temasek last year shows that those flows are bound to expand and consolidate. But, the international expansion of Brazilian companies is also strengthening the reverse flow: since 2007, Vale, the world's second largest mining company, has established an office in Singapore, joining predecessors such as the oil giant, Petrobras, and the aircraft manufacturer, Embraer, and also companies in the food industry and in the machinery sector, among others.

There is, moreover, an involving dialogue between different partners in Brazil and Singapore, such as IE Singapore and APEX, the Brazilian Agency of Export and Investment Promotion. The Latin Asia Business Forum has played a crucial role in this approximation, by bringing closer together policymakers and businessmen from Singapore and Latin America every year. This year, Brazilian authorities from the Federal and State governments will be in Singapore in November to take part in the forum, in which they will showcase several infrastructure projects and investment opportunities.

We have also been working at the Embassy to bring to Singapore expressions of our culture, such as design and architecture, music, visual arts, cinema and the exhibition 'Amazonia in Singapore', as part of the Singapore Design Festival being held in November at City Hall. We are also committed to increase academic and educational exchanges between Brazil and Singapore, which are crucial domains of international relations for their role in connecting people through knowledge.

So, let's join our hands together and celebrate this year for having brought us together and for paving the way for an even more eventful 2010 for our bilateral relations. 2010 is the year that will bring, for the first time ever, the Youth Olympic Games to Singapore. Meanwhile, we will be waiting for the Football World Cup in 2014, in Brazil, and the Olympic Games in 2016, to be held in Rio de Janeiro for the first time.

Singapore and Rio: Sister Cities—why not?

Singapore and Brazil: Partner Countries—why not?

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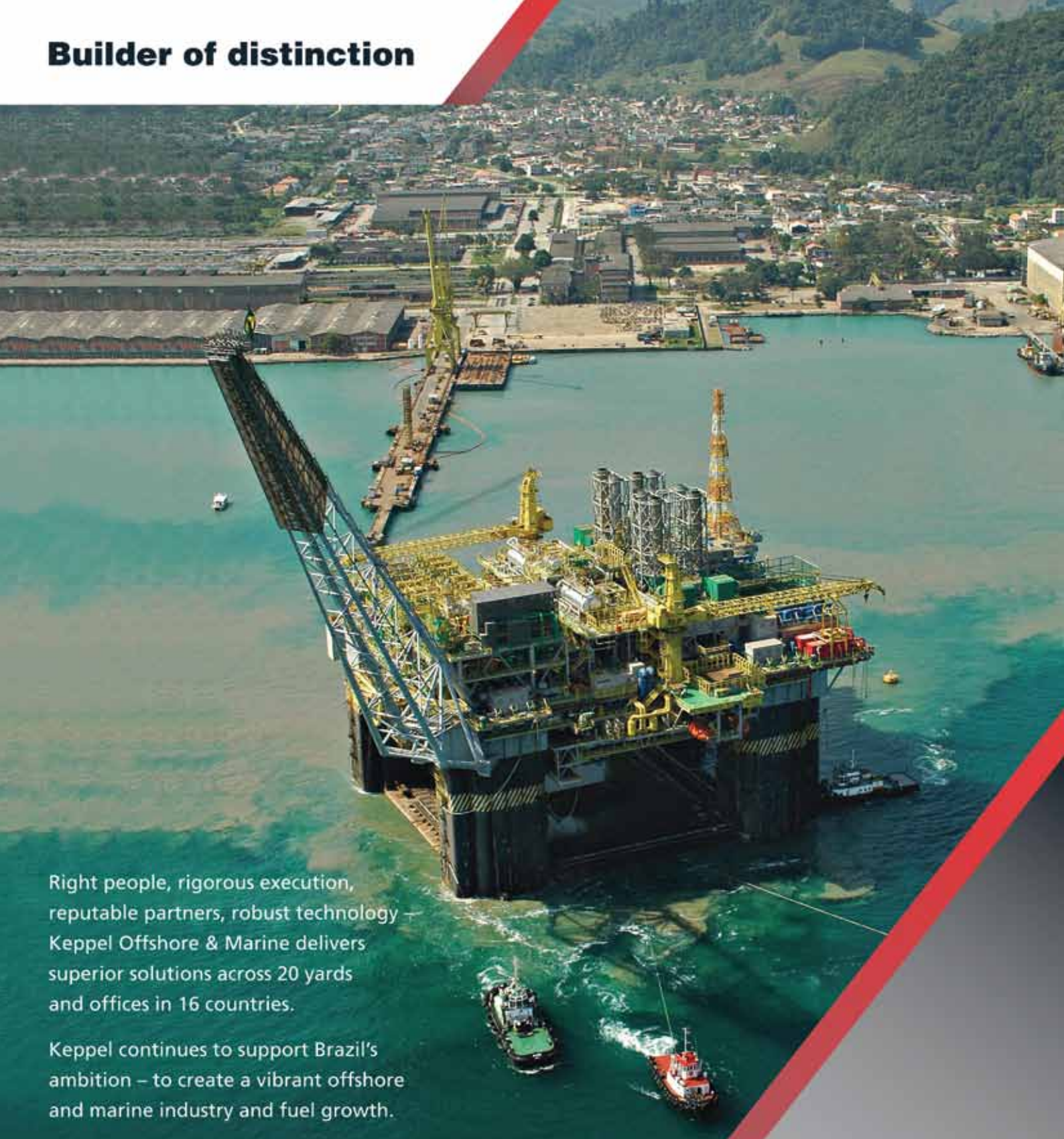

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BUILDING BRIDGES TOWARD DEVELOPMENT

TEXT GOVERNOR SÉRGIO CABRAL

Mr Roberto Osório, Governor Sérgio Cabral and Ambassador Paulo Alberto Soares

> "The 2016 Olympic Games to be held in Rio should require US$50 billion in private and public investment, an opportunity that Singapore should not miss."

During my brief yet very fruitful mission to Singapore in July 2009, my Secretariat and I had the opportunity to identify several similarities shared by Rio de Janeiro and the Asian country. Both Rio and Singapore have a rich history, a marvellous cultural heritage, strategically located in the heart of two of the most dynamic economic regions in the world, a vibrant economy and a privileged landscape. I was really impressed with the solutions found by Singaporeans for problems that we also share, such as shortage housing, urban mobility, transportation infrastructure and the Dengue fever. Upon my return, I had the opportunity to publicly establish a direct comparison between Rio and Singapore, stressing that Rio has the opportunity to learn from several of the best practices and solutions Singapore has found for its challenges.

I also had the opportunity to recognise many unexplored business opportunities. In fact, not only are trade numbers between Rio and Singapore very shy, but there is also room for

increasing bilateral foreign direct investments. Ports, airports, hotels, roads, shipbuilding, reinsurance market, chemical and petrochemical industry, not to mention the oil and gas industry, are only a few of the sectors where we can build bridges between Rio and Singapore.

Bearing that in mind, we received several Singaporean delegations to Rio and we are organising two missions to the Singapore in November. On one hand, our aim is to increase the visibility of the State as a privileged partner for business, presenting our comparative and competitive advantages and the strength of our companies and of our market. On the other hand, we want to establish a long-lasting and proactive partnership in the science, technology and educational sectors. The way I see it, this is the best way best way to give a boost to fortifying at fortifying the bonds between the two regions.

Rio de Janeiro landscape

Before October 2, 2009, Rio presented gleaming prospects: the Federation of Industries of Rio de Janeiro (FIRJAN) mapped over US$62 billion dollars in private and public investments in our State; the recent discoveries in the subsalt layer pointed that Brazil could have up to 80 billion barrels in new oil reserves, of which over 60 per cent were located in the State's marine zone, in the Campos Basin; and the hosting of the closing ceremony and several important games of the 2014 Football World Cup in the historical Maracanã Stadium, which entailed several new investments and a new international projection of our State, were only some of the references of a new cycle of development in Rio de Janeiro.

With the International Olympic Committee's decision to grant the capital of our State the honour and the responsibility to host the 2016 Olympics and Paralympics Games, I can affirm that the world will have its eyes turned to Rio de Janeiro for the next seven years. Our projection is that we will have over US$90 billion dollars in private and public investments in strategic sectors such as transportation, infrastructure, security, public sanitation and housing and, of course, in sports equipments. We intend to host a historical event in all aspects, from the organisation of the competitions to the warm welcoming of tourists that only the happiest city in the world can provide.

However, it is necessary to stress that the staging of this mega-event is not an end in itself. Our long-term goal is to accomplish social and economic change for the population of the State of Rio. The Olympics is expected to create over 120,000 jobs per year in the 2009-2016 period and also to have a direct effect in the economy of over U$22 billion dollars upon GDP growth, plus over double of that amount in indirect impacts. Rio is already in its way towards strengthening its economy and improving the quality of life of our population, and these events will intensify that tendency. In other words, we look at a long-term horizon, fomenting development and building a new social reality.

> *"The Olympics is expected to create over 120,000 jobs jobs annually from 2009 to 2016 and also to and also to create a direct impact on the economy of over US$22 billion dollars upon GDP growth, plus over double of this amount in indirect impacts"*
>
> **- Sérgio Cabral,**
> *Governor of Rio de Janeiro, Brazil*

Rio de Janeiro is at a turning point in its recent history. And I would like to invite our Singaporean friends to take part in this effort.

BRAZIL AT A GLANCE

Brazil is a Federative Republic formed by the Union of 26 States, 5,564 Municipalities and the Federal District, where the capital, Brasília, is located

The 1988 Constitution established a democratic state with a presidential regime. Since 2002, the President is Luiz Inácio Lula da Silva, who was re-elected for a second four-year term in 2006. The National Congress comprises the Chamber of Deputies, with 513 members, and the Senate, with 81 members. Direct elections for all levels of government are held every four years. On October 5, 2008, Brazilian municipalities held elections for mayor and municipal assemblies. More than 126 million citizens were expected to vote through the electronic ballot system.

The legal system in Brazil is based on the Civil Law. Brazilians enjoy ample freedom to profess their religion and to form political associations. Civil society associations are a thriving part of the Brazilian society. One of the greatest challeges to the country is the reduction of economic and social inequalities. Although large disparities remain between regions and population groups, the country is today among those with a high Human Development Index.

GEOGRAPHY AND POPULATION

Territory: 8,514,876 sq. km
- **Forests:** 57.2%
- **Arable land:** 41% (incl. pastures)
- **Land border extension:** 15,621 km
- **Extension of the coast line':** 7,367 km

Language: Portuguese

Population: 192 million
- **Urban:** 84.2%
- **Males:** 48.7%
- **Females:** 51.7%
- **Aged 14 or less:** 26%
- **Aged 15-24:** 18.5%
- **Aged over 60:** 10.2%
- **Religion:** 73.8% **Catholic**
- **Ethnicity:**
  - **Black:** 6.3%
  - **White:** 49.9%
  - **Mixed race:** 43.2%
  - **Asian/Indigenous:** 0.7%
- **Population Growth:** 1.3% p.y.
- **Largest City:** São Paulo (11 million)

Number of municipalities with over 0.5m inhabitants: 33

Number of Brazilians living abroad: > 3 million

Number of tourists received: 5 million

ECONOMIC ACTIVITY

GDP per capita (current prices): : US$ 8,209
GDP: US$ 1.612 trillion
GDP PPP: US$ 1.981 trillion
Real GDP Growth : 5.1%

GDP Composition
- **Agriculture:** 6%
- **Industry:** 28%
- **Services:** 66%

National Savings: 17.7% of GDP
Gross Capital Formation: 17.9 % of GDP

National Currency: Real (R$)

Inflation: 5.9% p.y.

Interest rates (SELIC): 8.75% p.y. (July 2009)

Unemployment rate: 8.75% p.y. (July 2009)
Number of companies: 4.4 million (2007)
Number of companies with < 20 staff: 96.9%

EXTERNAL SECTOR

Exports: US$ 197.9 billion
Imports: US$ 173.1 billion
Current account 2003-2008 avg: 0.6% of GDP
External debt / GDP: 15%
Net external debt / GDP: -0.9%

International reserves end-2008: US$ 193 billion
Foreign Direct Investment: US$45 billion
Worker Remittances Received(2006): US$ 4.2 billion
Exchange Rate (average): US$1 = R$1.70

SOCIAL INDICATORS

Human Development Index (UNDP, 2008): 0.80
Gini Index: 57

Life Expectancy: 72 years

Fertility Rate: 2.25

Infant Mortality (per 1,000 born): 22

Average Years of Schooling (>10 years-old): 6.5

Adult Literacy Rate (pop. < 15): 89.5%

Youth Literacy Rate (UNDP): 96.8%

Population with Access to Water: 89.2%

Population with Access to Sewage Collection (excl.sceptic tanks): 47.9%

ENERGY AND ENVIRONMENT

Electricity Consumption: 391,200 GWh p.y.

Renewable Sources in Energy Matrix: > 40%

Electricity from Renewable Sources: 85%

CO2 Emissions Per Capita (2006): 2.0 (OECD=11.5)

TECHNOLOGY AND SCIENCE INDICATORS

Internet Users: 24% of population

Households with PC: 27%

Households with Internet: 15%

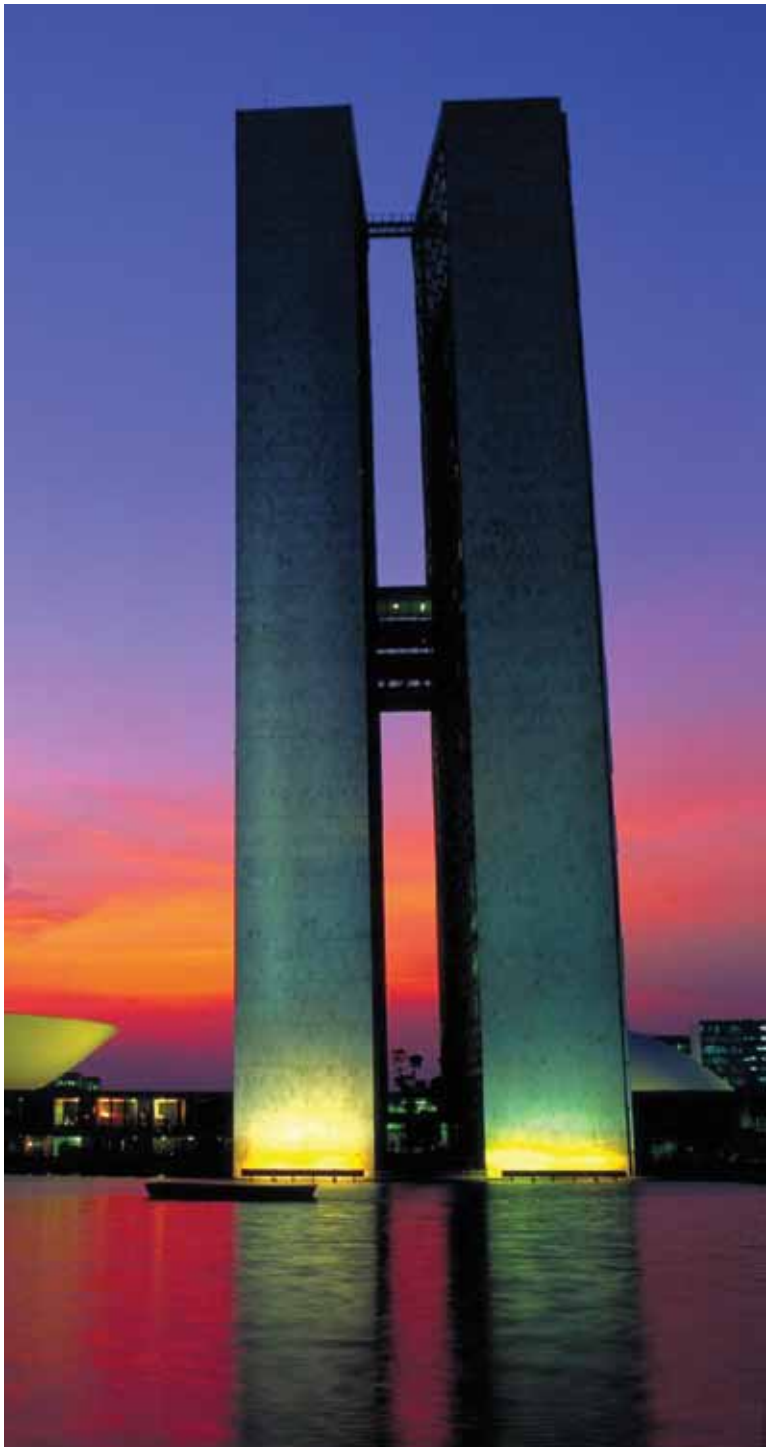
PhD degrees conferred (p.y.): 8856

R&D expenditure: 0.97% of GDP (0.57 public)

Source: Brazilian Institute of Geography and Statistics (IBGE) figures for 2008 as of August 2009, unless otherwise indicated. A general applicable observation is that the averages hide large disparities among Brazilian regions and population groups. Disaggregated data is available at INGE's database (www.ibge.gov.br) . Other useful websites are www.bcb.gov.br and www.undp.org.

BRAZIL: CONTINENT- SIZED OPPORTUNITIES

Total Brazilian exports have almost quadrupled since 1998. In order to keep growing, the country will require huge investments in infrastructure in the near future.



The Brazilian infrastructure sector is gearing up to support the strong growth of the country's foreign trade. Since 1998, exports have almost quadrupled, while imports have more than tripled. In order to handle the trade boom Brazilian ports – which handle 95 per cent of the country's trade by volume and 85 per cent by value – have been receiving significant public and private investments.

At the same time, large-scale projects in transportation logistics (railroads, highways, waterways and airports) are now underway, or will be starting in the short or medium term, and will promote greater integration with the country's ports system.

From 1998 to 2008 Brazil's total trade flow, covering imports and exports, jumped from US$108 billion to US$ 370 billion, an increase of no less than 242 per cent. In the same period, exports went from US$51 billion to US$ 198 billion, an increase of 288 per cent, while imports rose from US$57 billion to US$ 172 billion, a growth of 202 per cent. The country's 40 principal seaports and four principal river ports stretching along the 8,200 km Atlantic coastline and including 17 states handled a total of 754 million tonnes of cargo worth a total of US$ 281 billion in 2007.

Brazil is also expanding the number of its trade partners. In 2008, Brazil exported to 224 countries and imported from 109. While exports still include a variety of commodities (petroleum, iron ore, soy, orange juice, grains, coffee and sugar as well as newcomers such as ethanol and bio-diesel), they now also include high-value-added items such as airplanes, vehicles, engines, auto parts, processed meat and steel products.

Brazilian imports have risen significantly in 2008 but the country, nevertheless, continues to run a significant trade surplus. In September 2008 the ministry announced a plan titled 'Brazilian Export

Strategy'. This foresees investments of US$ 18 billion through 2010 to expand the participation of Brazilian exports in international markets and to stimulate small and medium sized companies to export.

At the same time that Brazilian exports are winning new markets, they are also increasing their trade relations with traditional partners such as the United States, European countries, Asia and Latin America. Brazil's increasingly dynamic presence in international trade is rooted, amongst other factors, in the increasing level of globalisation of the Brazilian economy. Foreign companies are operating with complete security in Brazilian port terminals and Brazilian companies are becoming more and more international.

In a bid to reduce bottlenecks in infrastructure, the Brazilian government is implementing its Growth Acceleration Programme (Programa de Aceleração do Crescimento – PAC). This specifies public and private investments totalling US$ 280 billion through 2010 in energy, logistics and urban and social infrastructure.

"We generated a very important surplus last year"

- **Miguel Jorge**, *Brazil's Minister for Development, Industry and Foreign Trade (MDIC).*

Specifically for logistics, US$58 billion will be invested in ports, airports, waterways, highways and railroads. According to the Brazilian Association for Infrastructure and Heavy Industry (ABDIB), an organisation which represents roughly 160 business groups generating 15 per cent of the GDP, public and private investments in energy, petroleum, transportation, logistics, basic sanitation and telecommunications reached US$ 48 billion in 2008, of which US$ 7.3 billion goes to transportation and logistics. Total investments in 2009 and 2010 should be around US$ 56 billion. An unique opportunity for international investors to partner with Brazilian enterprises.

EVOLUTION OF BRAZIL'S GDP AND FOREIGN TRADE

	GDP Brazil			Exports Brazil (FOB)		Imports Brazil (FOB)		Trade Balance	Total Trade Flow
Year	US$ bi	Var. %	Economic openness	US$ bi	Var. %	US$ bi	Var. %	US$ bi FOB	US$ bi
FOB	415.9	3.2	12.7	34.4	1.8	18.3	25.0	16.1	52.7
1990	469.3	-4.4	11.1	31.4	-8.6	20.7	13.1	10.8	52.1
1991	405.7	1.0	13.0	31.6	0.7	21.0	1.8	10.6	52.6
1992	387.3	-0.5	14.5	35.8	13.2	20.6	-2.3	15.2	56.4
1993	429.7	4.9	14.9	38.6	7.7	25.3	22.9	13.3	63.9
1994	543.1	5.9	14.1	43.5	12.9	33.1	31.0	10.5	76.6
1995	705.4	4.2	13.7	46.5	6.8	49.8	50.5	-3.3	96.3
1996	840.3	2.2	12.0	47.7	2.7	53.3	7.1	-5.6	101.0
1997	871.3	3.4	12.9	53.0	11.0	59.7	12.0	-6.8	112.7
1998	844.0	0.0	12.9	51.1	-3.5	57.7	-3.4	-6.6	108.8
1999	586.8	0.3	16.6	48.0	-6.1	49.3	-14.7	-1.3	97.3
2000	645.0	4.3	17.2	55.1	14.7	55.8	13.3	-0.7	110.9
2001	553.8	1.3	20.6	58.2	5.7	55.6	-0.4	2.6	113.8
2002	504.4	2.7	21.3	60.4	3.7	47.2	-15.0	13.1	107.6
2003	553.6	1.1	21.9	73.1	21.1	48.3	2.2	24.8	121.4
2004	663.8	5.7	24.0	96.5	32.0	62.8	30.0	33.7	159.3
2005	882.4	3.2	21.7	118.3	22.6	73.6	17.2	44.7	191.9
2006	1,072.0	3.8	21.3	137.5	16.2	91.4	24.2	46.1	228.9
2007	1,295.5	5.4	21.7	160.6	16.9	120.6	32.0	40.0	281.2
2008	1,612.0	5.1	23.6	197.9	23.2	173.2	43.6	24.7	371.1

Source: Ministry of Development, Industry and Foreign Trade of Brazil

Minister Pedro Brito and Ambassador Paulo Alberto Soares

BRAZILIAN PORTS OPEN FOR INVESTMENT

TEXT JOÃO CARLOS RODRIGUES **PHOTO** TÂNIA MEULENBERG

Brazil is ready to receive new investments in the water transportation sector. In addition to having one of the world's longest sea coasts and a vast river network, the country has one of the most attractive and secure environments for attracting domestic and foreign investment: solid democracy; strong and independent institutions; and specific legal and regulatory frameworks for the ports sector. The sector is supervised by The National Water Transportation Agency (ANTAQ), which is connected to the Special Secretariat for Ports (SEP).

While ANTAQ is a state agency connected to the SEP, which is itself linked to the office of the President, it operates independently from the government. In addition to counting with a legal structure that guarantees investors security, investment projects in the ports sector will now enjoy an additional stimulus: under Decree 6,620, signed on October 30, 2008 by President Luiz Inácio Lula da Silva, the government opens up the possibility of both Brazilian and foreign private companies constructing and operating ports under a concession.

New rules will allow Brazilian and foreign private companies to construct and operate ports under concession

The government hopes that this will attract investors to expand the Brazilian ports system, along the lines of a model used for the construction of hydroelectric

> "The government needs private investments and wants to encourage them"
>
> **- Minister Pedro Brito**

power stations: the winner of the public tender will have the right to construct and run the port, handling third-party cargo. Concession contracts will be valid for 25 years, with one possible extension for a further 25.

The decree eliminates the need for the investor to operate his own cargo through the port. Thus, any type of investor may bid for and be awarded such a concession. Until now, a private company could only construct a private terminal to handle its own cargo plus that of third parties. In other words, the investing company necessarily had to use the port itself. Removing this constraint should boost investments in the sector.

Minister Pedro Brito, responsible for the SEP, said he hopes that with this new operational model Brazilian ports will attract private investments of around US$ 11 billion through the next five years. The first ports to be offered to private investors under the new model in 2009 will be in Manaus, in the State of Amazonas, and Ilhéus, in the State of Bahia.New investments will be protected by the legal structure which the government has put in place for ports sector, which is regulated by specific legislation which defines the role of the state.

The Ports Law (No. 8,630 of 1993, with subsequent alterations) gives the Union the right to exploit, either directly or via concession, the organised ports in the country – note that Brazil uses the term "organised port" to define one where the traffic and operations are under the jurisdiction of a port authority, supervised by a Port Authority Council to regulate port operations. The port is defined to include anchorages, docks, quays, bridges, berthing quays, wharves, adjacent land, warehouses, buildings and internal circulation ways, in addition to the infrastructure which protects and provides maritime access to the port, for example groynes, breakwaters, locks, manoeuvring area and anchorage areas.

The law also lays down the norms which govern private initiative acting in the ports sector. Investors enjoy the right to construct, refurbish, expand, improve, lease or otherwise derive commercial benefit from port installations. Companies may sign leasing contracts with the Union, in cases where they will be directly exploiting port infrastructure, or with a port concessionaire.

However, such contracts must always be awarded via public tender when the company will be carrying out activities in an area which is located within the port. Brazilian legislation also determines that investors must require authorisation from the government to install a small-scale public port, a cargo transhipment facility or a private-use terminal when these are outside the area of an authorised port, or when the Interested company holds legal title to the land even within the area of an organised port.

Prior to signing a lease contract with the Union or receiving authorisation to offer port services the interested company must obtain formal approval from the customs authorities and the

appropriate municipal authorities where the undertaking will be installed. Additionally, investors must obtain prior approval of the Environment Secretary of the appropriate state, in the form of an Environmental Impact Report (RIMA). Brazil has created the National Programme for Leasing Port Areas and Installations as a move to expand port operations and handle the growth of cargo at organised ports. The goals of the programme include: increasing operational performance and improving the quality of port services; reducing port costs and consequently port charges; encouraging fair competition in the operation and exploitation of port services; and environmental preservation within the area of the organised port.

Companies will also be able to present projects to exploit a potential new port zone, as for example the state energy company Furnas and the private constructor Odebrecht did on the Madeira River in the western Amazon, where they are building a major hydroelectric power station. However, this does not allow for immediate construction of the terminal. "They (the future port installations) must first be offered in public tender and there is no guarantee that the company which has prepared the project will necessarily win the bidding," the Minister explained. "The fact that you own a piece of land beside a river where there is a waterfall does not give you the right to build a hydroelectric power station; you have to go through a process of public tender within a formal plan of concessions."

The same thing will happen with port installations. "The fact that somebody owns a piece of land beside the sea will not give him the right to build a port wherever or however he wishes; the project must be in a concessions plan and he must win a public tender," the Minister said.

According to the Minister, the changes will satisfy the concerns that have prevented private investors participating more actively in the sector. "The government needs private investments and wants to encourage them," the Minister said. Before the end of this year the government is set to announce a concessions plan which has been drawn up following a detailed study of port requirements and investment opportunities.

However, Minister Brito rejects the suggestion that all this represents a kind of privatisation of ports. "This would be true only if we moved to a system of exclusively private decisions without any interference of the government, handing over all port management to the private sector. But this is something that does not happen anywhere in the world except Hong Kong," the Minister said.

THE FUTURE OF DEEP WATER OIL EXPLORATION

TEXT AND PHOTOS PETROBRAS

PETROBRAS AND THE PRE-SALT

The pre-salt represents a new horizon for Brazil. Petrobras was the first company in the world to find and produce oil and gas under the salt layer in geological horizons and at depths of up to 7,000 meters from the water line. The new discoveries will rank Petrobras and Brazil on a privileged position in the global oil and gas industry. Located in the Santos Basin, the Tupi accumulation alone holds recoverable volumes estimated at 5 to 8 billion barrels of oil equivalent (boe).

The Iara reservoir, meanwhile, also in the Santos Basin, holds 3 to 4 billion barrels of oil equivalent (boe). Other Santos Basin reservoirs, such as Jupiter, Carioca, Bem-Te-Vi, Guará, Parati, Caramba, Iguaçu e Iracema, are in their assessment phases. In the Jubarte pre-salt field, in the region known as the Parque das Baleias, (off the Espírito Santo coast), in the Campos Basin, it is estimated there are 1.5 to 2 billion barrels. The first oil from this area began being produced on September 2, 2008.

With the pre-salt, the Brazilian oil reserves will soar from the current 14 billion to 25 billion barrels. The company expects to invest US$111.4 billion developing production in the pre-salt through 2020: US$98.8 billion in the Santos Basin, and US$12.6 billion in Espírito Santo.

President Lula da Silva and José Sérgio Gabrielli, President of Petrobras

WHAT IS THE PRE-SALT?

The major discoveries made in the past few years in the pre-salt layer are spread along the Brazilian coast, between the states of Santa Catarina and Espírito Santo, following the shoreline at about 300 km from the mainland. The oil there is of good quality (around 300 API) and is nestled in reservoirs at depths of 5,000 t0 7,000 metres from the shore line. Tupi is nearly 300 km off the coast, while the producer fields in the Campos Basin are up to 150 km away from the shore.

TUPI

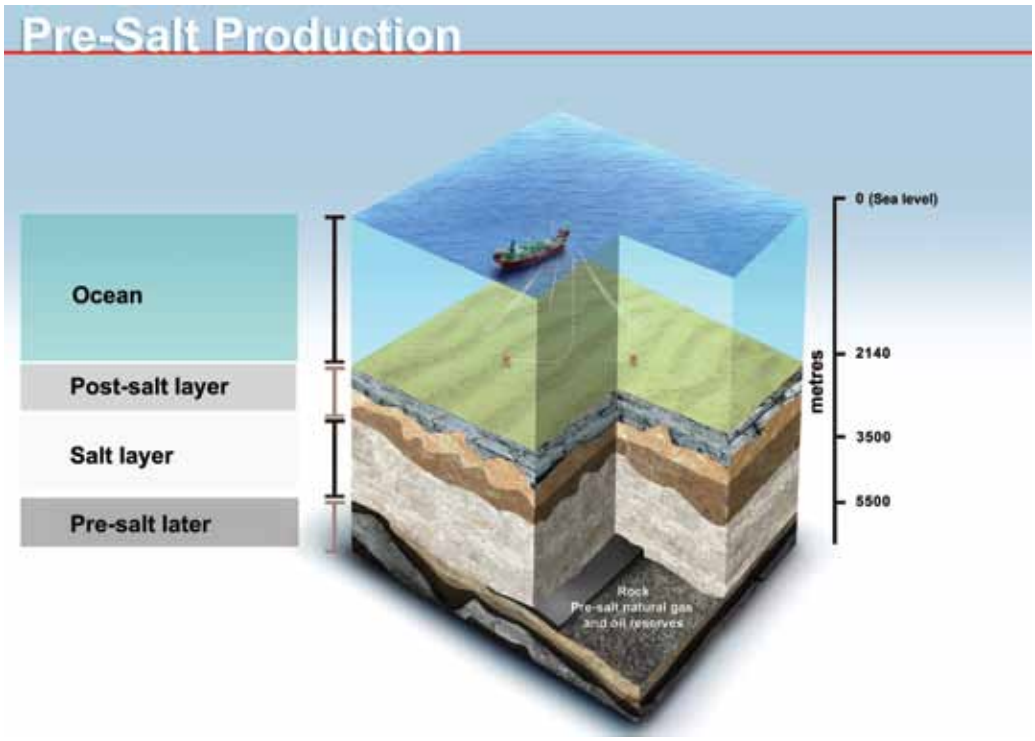
Tupi is expected to produce 100,000 barrels of oil and five million cubic meters of gas per day in 2010. In 2017, pre-salt production is envisioned to surpass the 1-million-barrel-per-day mark, and to top out at 1.8 million in 2020. This will nearly double Brazil's current production.

On May 1, 2008, Petrobras kicked-off the Tupi Extended Well Testing (EWT) with the BW Cidade de São Vicente platform vessel. The EWT will allow technicians to learn to better understand production production conditions, since in the Santos Basin's pre-salt layer, among other features, the reservoirs are in carbonatic rock of microbial origin, unlike the Campos Basin reservoir formations which the company is already familiar with.

Among other things, the EWT will investigate the behaviour of the reservoirs in long-term production, fluid movement or draining during production, and submarine outflow and the best well geometry.

The President of the Republic, Luiz Inácio Lula da Silva, who attended the EWT kick-off ceremony, complimented the Company for its achievement and emphasized the importance of the historical moment. "Beginning today, the history of our country will start anew." During the ceremony, President Gabrielli highlighted the Petrobras' efforts, from the time it was created, calling everyone's attention to the world record, "which led Petrobras, after detecting the Tupi reserves, to lift the first barrel of oil from it in a mere three years," emphasized Gabrielli.

Thus far, Petrobras has achieved a 100 per cent success rate in exploring the Santos Basin's per-salt layer. The Company found oil in all wells it drilled. Additionally, it is the deepwater exploration leader, holding 23 per cent of the global operation. The runner-up holds 14 per cent.



DEVELOPMENT PLAN

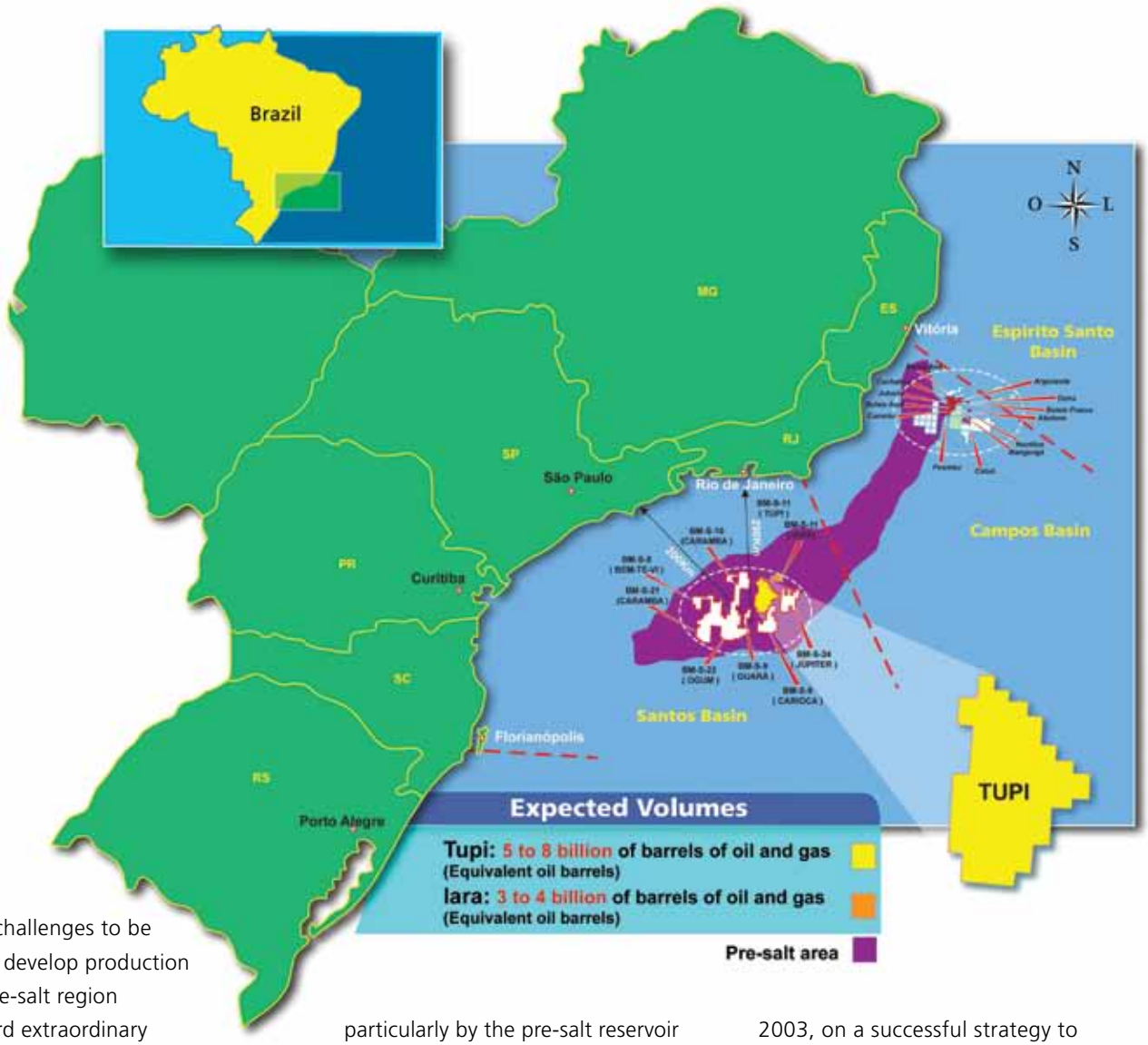
Two phases have been set in the Santos Basin Pre-Salt Pole Integrated Development Master Plan: the first, dubbed Phase 0, is aimed at collecting geological and production information by drilling 22 exploratory wells to delimit the reservoirs and Extended Well Tests (EWT), in addition to the Tupi Pilot. The definitive production systems will be deployed during the second phase, dubbed Phase "1."

The Tupi Pilot will go on stream in late 2010, with FPSO Cidade de Angra dos Reis, which will be able to process 100,000 barrels of oil and compress 4 million cubic meters of gas per day.

Two more pilot projects, which are currently being planned, and eight FPSO-type production platforms, are expected to go on stream in Phase 1A. The two new pilots, with characteristics similar to those of Tupi, will go on stream between 2013 - 2014, likely in known areas such as Guará and Iara, in a deployment sequence yet to be defined. The eight FPSOs, capable of producing 120,000 barrels of oil per day each, are slated to start producing between 2015 and 2017 and they will allow a production of more than 1,000,000 barrels per day to be reached in that pole.

CHALLENGES AND OPPORTUNITIES

In addition to increasing Brazilian oil production, the development of the pre-salt discoveries will boost job opportunities with the training of highly specialized labour. It will also allow the creation of new technological solutions, systems, and production units, both for equipment and logistics.



The challenges to be faced to develop production in the pre-salt region will afford extraordinary opportunities for the creation of knowledge, technological programs and partnerships with universities and research institutes, buttressing the integration with the Brazilian and international technological community. The development of the pre-salt pole will boost the demand for equipment and services in several industrial segments and also open business opportunities for foreign companies to invest in Brazil.

IMPACT ON THE INDUSTRY

The record volume of investments and orders Petrobras has scheduled for the 2009 - 2013 period opens a new and promising business front for the offshore goods and services industry. Furthermore, on account of the size of the demand that will be generated, particularly by the pre-salt reservoir development projects, it also affords a unique opportunity for the Brazilian industry to consolidate itself, in a competitive manner and on sustainable bases, as a global oil and gas industry supplier.

In the coming years, the project portfolio the Company has designed will allow for large-scale demand for drilling rigs, production units, submarine arrays, pumps, pipelines, flexible lines, in addition to thousands of other devices. Petrobras' Business Plan earmarks upwards of US$92 billion to oil exploration and production activities alone in Brazil through 2013.

PROMINP

Petrobras and the Brazilian government have been betting, since 2003, on a successful strategy to qualify Brazilian suppliers. This strategy has been consolidated through the Oil Industry Mobilization Programme (Prominp), the mission of which is to revitalize the national oil and gas industry on competitive, sustainable bases, in addition to driving the increase in local content in projects developed by Petrobras. This program has already raked-in significant results in five years. Since the creation of the Prominp, the national industry's participation in the sector's investments grew 57 per cent in 2003 to 75 per cent in the first half of 2009, an expressive additional amount of US$13.2 billion in goods and services contracted in the domestic market and the generation of an additional 605,000 jobs in this period.

sembcorp marine

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A GROWING PARTNERSHIP ACROSS CONTINENTS

TEXT AND PHOTOS KEPPEL OFFSHORE

Keppel Offshore & Marine's collaboration with Brazil began almost three decades ago, through shiprepair and ship conversion work for Petrobras. In 1994, Keppel FELS completed the P-18, its first landmark project for Petrobras.

National pride - H.E. President Lula (raising Brazil's national flag) and First lady Marisa Letícia (on his right) with workers of Petrobras and Keppel FELS Brasil celebrating the P-51

The FPU P-51 which successfully achieved first oil in January 2009, is expected to reach its maximum operating capacity and account for 8 per cent of Brazil's domestic oil production by 2010.

In 1994, Keppel FELS completed the P-18, its first landmark project for Petrobras. Considered the most technologically advanced production platform of that time, P-18's success was crucial in propelling the relationship between the world's foremost rig builder and designer and Brazil's fledging state-owned oil company. It also paved the way for more milestone collaborations together, including the conversion of a second semisubmersible rig, P-27, in 1998.

In the years that followed, Brazil rose as an important market with its huge hydrocarbon reserves and the national goal of energy self-sufficiency. With Petrobras's expansion, more major contracts were awarded to international companies. Yet at the same time, there was a strong national desire to retain the bulk of construction work within the country, to create jobs and restore Brazil's maritime industry to its former glory in the 60s.

Emerging confident from its experience with the P-27, Keppel was ready to answer the call for greater local content and take on projects on Brazilian soil.

NEAR MARKET, NEAR CUSTOMER

In 2000, Keppel FELS boosted its presence in Brazil with a local arm, Keppel FELS Brasil in Rio de Janeiro and the BrasFELS yard in Angra dos Reis. Spanning 360,000 square metres, the BrasFELS yard was to become the most comprehensive offshore and marine facility in the Southern Hemisphere.

It took another three years before Keppel landed its first major project in Brazil, the conversion of FPSO P-48 for Halliburton Produtos. P-48 is the first FPSO to be converted in Brazil, and was crucial in anchoring Petrobras's confidence in the capabilities of Keppel's local yard.

Since then, Keppel has achieved many firsts for the Brazilian shipbuilding industry, including the construction of some of the world's largest Floating Production Units (FPU) P-52 and P-51 for Petrobras.

P-52 is the first project which Petrobras had imposed a minimum 60 per cent local content requirement. P-51, an identical sister unit, was later built almost entirely in Brazil by Keppel. Gaining on the momentum of its repeated success, the BrasFELS yard is presently constructing a third FPU, P-56.

The win-win relationship between Keppel and Petrobras has also been extended to the latter's appointed offshore operators. In Singapore, Keppel Shipyard has long established a strong track record for fast-track conversions of FPSOs, and has continued to be entrusted with several repeat conversions projects from its customers for Brazil, especially through long-time customers Single Buoy Moorings and Prosafe. It also undertook the conversion of the world's first two Floating Storage Re-gasification Units, Golar Spirit and Golar Winter, for Golar LNG. Recently, Currently, one of Keppel Shipyard's projects for Brazil is the modification of FPSO Capixaba for SBM, which was a fast-track conversion carried out by Keppel Shipyard in 2006.

"We have worked on several important projects for Brazil and have established win-win relationships with Petrobras and its operators. In consistently delivering high quality projects and transferring knowledge through a strong local presence, we have proven our commitment to support and grow with our valued Brazilian stakeholders."

- **Mr Tong Chong Heong**, *CEO, Keppel Offshore & Marine*

Striking gold -Petrobras' Director of Exploration and Production, Mr Guilherme Estrella getting first dips on P-52's harvest. The Keppel-built production platform, P-52, struck its first oil for Petrobras in November 2007, from the Roncador field.

Collectively, the production units that Keppel has undertaken for Brazil, are expected to contribute to more than half of Petrobras's production rate of 1.94 million barrels of oil per day.

On the drilling front, Keppel FELS is also building two DSSTM 38 semisubmersible rigs for trend setting Brazilian drilling contractor group, Queiroz Galvão Óleo e Gás (QGOG). Jointly developed and owned by Keppel's Deepwater Technology Group and Marine Structure Consultants, the DSSTM 38 semisubmersible drilling rig design has been configured to meet operational requirements in the deepwater "Golden Triangle" region, comprising Brazil, Africa and the Gulf of Mexico. This innovative and highly cost-effective rig is well-suited to operate at water depths of over 9,000 feet.

QGOG's Gold Star, the world's first DSSTM 38 deepwater rig, has been chartered by Petrobras to support aggressive plans to improve the harvesting of hydrocarbons in Brazil. At the moment, the second DSSTM 38 rig, Alpha Star, is beginning construction at Keppel FELS.

EYE ON THE FUTURE

The story of Keppel and Brazil is one of partnership and shared vision. Keppel remains committed to being the partner of choice and provider of solutions to its Brazilian customers. Through its strong local presence, the Company has also demonstrated its commitment to grow with the Brazilian market and willingness to push boundaries for a win-win partnership.

Succeeding upon success, Keppel's consistent track record of delivery and contribution towards Brazil has shone brightly as symbols of partnership, commitment and spirit. The milestone projects are today iconic of Brazil's national pride in becoming one of the world's largest oil producers.

16,152.23 KM

IT IS NOT THE DISTANCE TO COVER THAT MATTERS, BUT HOW FAR WE GET CONNECTING NATIONS.

On September 7th, Brazil´s Independence Day, Queiroz Galvão Óleo e Gás celebrates with Singapore another year´s partnership, growth and development.

By the time we conclude the construction of Gold Star platform, the Alpha Star project arises to further strengthen the bond of our people.

Many cultures, two countries and one goal

queiroz galvão
ÓLEO E GÁS

SEMBCORP MARINE'S BRAZIL SYNERGY

TEXT AND PHOTOS SEMBCORP MARINE

When the Very Large Crude Carrier (VLCC) Friendship docked at Sembcorp Marine's subsidiary Jurong Shipyard in 1997, it symbolised a milestone beginning of a long and synergistic relationship with Brazil's offshore oil and gas industry. The VLCC, converted by the yard into the Floating Production Storage and Offloading vessel (FPSO) Petrobras 37, paved the way for a series of major offshore projects that the yard would undertake for Brazil.

Sembcorp Marine's strong links with Brazil can be attested by a proven track record of successful deliveries [see table]. To date, the Group has, through its subsidiary Jurong Shipyard, performed the most number of conversions for Petrobras, Brazil's national oil and gas company. These comprise nine projects for Brazil's offshore oil & gas industry, including six FPSOs, two Floating Storage Offloading vessels (FSO) and one Floating Production Unit (FPU).

The Group's close association with its Brazilian associates can be traced way back to the 1970s when tanker and bulk carrier repairs were performed for Petrobras and Docenave. This laid the foundation for Sembcorp Marine's entry into Brazil in 2000, when the Brazilian government extended an invitation to participate in the revival of the country's marine and offshore industry.

Since then, Sembcorp Marine has forged a strong presence in Latin America through its Brazil hub, which was established as part of its global hub strategy to establish an international network of yards with complementary facilities and services to better serve its international customers.

Brazil was chosen as a strategic growth hub due to its rich maritime heritage – it was once the second largest shipbuilder in the world – and its strategic location in close proximity to the oil and gas centres of the Atlantic, the Gulf of Mexico and West African regions. The country's abundance of land, people and resources and its stable political and economic environment made it ideal to grow the Group's marine and offshore business.

West Taurus, an ultradeepwater semi-submersible built by Jurong Shipyard, is currently chartered by Petrobras for drilling offshore Brazil

The FPU Petrobras 40, an early collaboration success between Jurong Shipyard and its Brazilian partners

This joint partnership with Brazil has reaped results. After the conversion completions of FPSO Petrobras 37, FSO Petrobras 38, and FPU Petrobras 40 in 2000, the Group went on to deliver FPSO Fluminense in 2003, FPSO Cidade do Rio de Janeiro MV14 in 2006, and FSO Cidade de Macae MV15 in 2007.

The leveraging of complementary facilities and expertise has also brought to fruition several turnkey FPSO conversion projects, where marine hull conversion works were done in Singapore; and topsides fabrication, installation, integration and commissioning undertaken in Brazil.

Brazil-Singapore Synergy: The FPSO Petrobras 54

Successful FPSO conversions performed in Singapore and Brazil include the Petrobras 43 in 2004, as well as the landmark Petrobras 50 and Petrobras 54, which were major milestones in Brazil's goal of achieving oil self-sufficiency and achievement of net oil exporter status, in 2006 and 2007, respectively.

Two units of newbuild sixth generation ultra-deepwater semi-submersible drilling rigs built by Jurong Shipyard – the West Taurus, delivered in November 2008, and Ocean Courage, delivered in July 2009 – were awarded charters by the Petrobras Group for deployment in Brazil and the Gulf of Mexico.

Going forward, Sembcorp Marine will continue to explore growth opportunities to further strengthen its presence in Brazil and Latin America through a multi-prong strategy focused on joint co-operation and win-win synergy with its Brazilian partners and associates.

YEAR DELIVERED	PROJECT	DETAILS	FIELD
2000	Petrobras 37 FPSO	This tanker to FPSO conversion marked the start of a series of projects for Petrobras, Brazil's national oil company and its partners.	Marlim field
	Petrobras 38 FSO	Tanker to FSO conversion for Petrobras	South Marlim field
	Petrobras 40 FPU	Converted from the world's largest derrick crane semi-submersible for Petrobras, the FPU P-40 was one of the world's largest floating production units.	Marlim field
2003	FPSO Fluminense	Tanker to FPSO conversion	Bijupira / Salema field
2004	Petrobras 43 FPSO	Tanker to FPSO conversion for Petrobras	Barracuda field
2006	FPSO Cidade do Rio de Janeiro MV14	Tanker to FPSO conversion	Espadarte Sul field
	Petrobras 50 FPSO	One of the largest FPSOs ever converted of its kind, the P-50 was a milestone that enabled Brazil to reach national self-sufficiency in oil production.	Albacora Leste field
2007	Petrobras 54 FPSO	The P-54 FPSO conversion marked another milestone for Petrobras by setting a Brazilian daily oil production record of 2,000,238 barrels – a feat few companies have achieved.	Roncador field
	FSO Cidade de Macae MV15	Tanker to FSO conversion	Marlim Sul / Marlim Leste / Roncador field
2008	West Taurus semi-submersible drilling rig	Constructed using Jurong Shipyard's proprietary award-winning technique, these ultradeepwater 6th generation Fried & Goldman ExD Millennium Class semi-submersible rigs were awarded drilling charters by Petrobras	Offshore Brazil
2009	Ocean Courage semi-submersible drilling rig		Gulf of Mexico

"I'm surprised at how fast things are changing. With no need for a Brazilian partner, nor restrictions on transfer of profits back to the home country, one could literally own a piece of Brazil through investing in an airport!"

- This sums up the sentiments of **Ms Solange Vieira**, *Director-President of ANAC (Agência Nacional de Aviação Civil), on the rate of change she observes in airports situated particularly in Asia.*

CALL TO INVESTORS: TAKE OFF WITH US!

TEXT LIONEL LIM **PHOTOS** SANJEEV NAIR, ALBERTO RUY

In town recently for an international civil aviation conference, Ms Solange Vieira enthused that this change is part of the global winds of change that are blowing into the corridors of all major airports in the world, and which will continue to do so in order to stay competitive. As one of the world's largest countries, Brazil, too, is currently undergoing a radical transformation of its civil aviation sector.

Fully operational since March 20, 2006, and reporting directly to the President of Brazil, ANAC is responsible for regulating safety and security matters related to civil aircraft and its components, personnel licensing, operations and aerodromes.

Sharing the Brazilian experience, Ms Vieira explained that the Brazilian air transport market had been subjected to total regulation until the late 1980s. But since the early 1990s, the government has initiated a gradual process of economic liberalisation. This was due largely to the fact that the air transport market's deregulation was already taking place in other countries since the late 1970s, with emphasis on the customers. Secondly, the Brazilian government also acknowledged that regulation by force hindered the development of competitive markets and prevented airlines from supplying efficient services.

It is an open secret that the air sector remains one of the most lucrative in Brazil. As Brazil is intersected by the many tributaries of the Amazon River,

overland transport is an immensely arduous task. Moreover, the difficulty of rail and road travel is heightened by the vast distances between cities. In view of these challenges, Brazil chose to reform its air transport industry as the long-term solution. Via both, production of goods and tourism, this would serve a dual purpose, as air transport would directly induce economic growth into and within the country. Understandably, it would enhance both national integration and external connectivity.

Antonio Carlos Jobim International Airport (Galeão) - Rio de Janeiro

Currently, with bilateral air agreements with 24 countries (including Singapore), it is evident that ANAC had sped up the process of liberalisation. Some of the initiatives implemented include the elaboration of measures to abolish non-operational restrictions in central airports; definition of slot allocation provisions in congested airports; introduction of free pricing regime in international air services; and preparation of a regulatory framework to the concession of Brazilian airports to the private sector.

The National Civil Aviation Agency's Headquarters in Brazil's Capital, Brasilia

As a strong advocate of ending the monopoly of airport administration and the total liberalisation of international routes, it is clear which direction we can expect the Brazilian civil aviation sector to be heading under the stewardship of Ms Vieira. In her own words, she envisages "a safe, efficient, economic, modern, competitive, environmentally sustainable civil aviation system for Brazil."

Noting that there was no specific model for Brazil to emulate, Ms Vieira remarked that Brazil could at best learn from the experiences of others, but still had to come up with its own success formula.

Exchanging learning experiences with representatives from other countries such as Germany, France, Britain and Singapore, she reiterated her vision for ANAC to continue to push for efficiency and increased competition in the civil aviation sector, as this would benefit the Brazilian economy and consumers.

Quoting successful local examples of TAM Airlines and Gol (Brazilian airlines), Ms Vieira was particularly proud of how well both were faring, in terms of profit margins and international competition.

Ever the astute economist, Ms Vieira was quick to identify the opportunities that Brazil could offer – chief of which was to introduce direct flights to this part of Asia (something which is currently lacking). Welcoming Asian airlines to consider Brazil as a new flight route, she forecasted that it would be a potential big business. With 250 airports in its country hangar, this certainly looks like a lucrative deal, should one consider corporatising each and every one of them. She says "With no need for any Brazilian partner nor restrictions on transfer of profits back to the home country, one could literally own a piece of Brazil through investing in an airport!"

BRINGING AIRPORT EXPERTISE OVERSEAS

TEXT AND PHOTOS CHANGI AIRPORTS INTERNATIONAL

Famous for its excellence in service, state of the art facilities and a one stop shopping experience, Singapore's world-renowned Changi Airport is a winning combination of operational efficiency and customer delight

Changi Airport has enjoyed a continuous string of success since its inception in 1981, with more than 300 accolades under its belt. Changi Airports International (CAI), the overseas arm of Changi Airport Group, the operator and manager of Changi Airport, hopes to share this successes with you.

CAI prides itself as the world's leading airport company, expanding the Changi brand overseas. Through CAI, the Changi Airport Group hopes to spread the success of Changi Airport by establishing a presence in five key international markets – the Middle East, India, China, Russia and South East Asia.

CAI has been involved in the development of various airports around the world. Its portfolio concentrates on airport assets in emerging economies. CAI sees growth and value enhancement in these assets. The portfolio is balanced with a component consisting of assets in the more mature airport markets.

CAI's broad range of business activities includes investment in foreign airports, provision of consultancy services and provision of airport management services.

MAKING GLOBAL HEADWAY

INDIA: CAI's efforts to establish a global presence is gaining impetus. CAI recently made its first investment in India in July 2009, with a 26 per cent stake in Bengal Aerotropolis Projects Limited (BAPL). The project signified CAI's first investment in an Indian greenfield airport city project. Overall, the project aims to attract about US$ 2.5 billion in investments.

Going beyond investment, CAI will also prepare the master plan for the

King Fahd International Airport - KFIA, Dammam - Saudi Arabia

airport and provide technical know-how for its management and operations.

MIDDLE EAST: Extending the company's presence in the Middle East, CAI secured a six-year management contract to provide operations management services at King Fahd International Airport (KFIA) in Dammam, Saudi Arabia. It marked the first time a foreign operator has been appointed to help manage KFIA. It also showed that CAI's business model and airport management philosophies are recognised and suitable for the Middle East.

CHINA: In China, CAI was awarded an airport commercial consultancy project for Chongqing Jiangbei International Airport's Terminal 2A. Located in the Yubei District of Chongqing, the airport serves as an important hub for south-western China. CAI proposed a commercial strategy which has helped make significant improvements to the passenger retail experience and increase the commercial revenue in the new terminal.

EUROPE: CAI was appointed by Aeroporti di Roma (ADR) as its consultant for the development and modernisation of the airport system in Rome and the Lazio region. CAI prepared a long-term airport development strategy plan to help define the roles and positioning of ADR's three airports - Fiumicino, Ciampino and Viterbo. CAI also formulated a route development strategy for ADR to help realise its potential as a gateway-hub to Italy.

CAI welcomes strategic partnerships and opportunities while Changi Airport Group continues to play an integral role in maintaining Changi Airport's position as the world's premier air hub.

Mention the words aircraft manufacturer and most people will think of Boeing and Airbus. The iconic B747 and A380 likely represent man's most impressive impressive conquests of the sky. These airplanes have captured our imagination and make us think that there may be no limits to what we can build.

BRAZILIAN BIRDS ARE MIGRATING TO ASIA

TEXT AND PHOTOS ALEXANDRE GLOCK, MANAGING DIRECTOR OF EMBRAER ASIA PACIFIC PTE LTD

Yet there is a whole other side of aviation that doesn't always make headlines but is arguably just as impressive. The world of regional aircrafts – turboprops and small jets – represents a lifeline for many national economies. Brazil's Embraer has been the global leader in the manufacture of regional aircraft for decades. It may surprise you to know that the company has been operating in Asia for 32 years.

In many parts of the world, Embraer is not a household name, yet from its facilities in Sao Jose dos Campos, Brazil, and Harbin, China, some 5,000 of its airplanes have been delivered to customers in 88 countries. Embraer's

venerable turboprops – the 15-seat EMB 110 Bandeirante and 27-seat EMB 120 Brasilia – are some of the most prevalent fleet types among airlines in the USA and Europe. They are the workhorses that built regional aviation in the world's largest markets.

This year, as Embraer celebrates its 40th anniversary, the company continues to produce innovative products, and has a more diverse portfolio of aircrafts that are finding homes from Australia to Japan and everywhere in between. I moved from Brazil to Singapore last January to lead the company's activities in the region. In the few months that I've been here, I've come to realize the tremendous potential for Embraer in Asia. We're working hard to show how the company's products are ideally suited for airlines, governments and private corporations. Since Singapore is the crossroads of Asia, its strategic location helps our people to be anywhere in the region within a few hours.

DIVERSIFYING EMBRAER'S PRODUCT PORTFOLIO

Embraer has come a long way since the early days when the company only produced turboprops. Embraer has undergone a radical transformation to become, depending on how you measure it, the third largest aircraft manufacturer in the world with some 17,000 employees and a US$19.8 billion order backlog. Although the company may not be well known among the traveling public in Asia, its presence is growing thanks to innovations in its executive aircraft division, the success of its defense systems products, and the new E-Jets family of passenger aircrafts.

EMBRAER Simulator

HELPING TO KEEP THE WORLD SECURE

The Amazon conjures up images of nature and tropical beauty but also attracts a criminal element and destructive influences on the environment. Due to its vast size, the government of Brazil employs Embraer aircraft to maintain continual surveillance in its efforts to track narcotics movements, deforestation and border incursions.

The company's portfolio of defense aircrafts includes types designed to gather intelligence on land and over water, train military pilots, fly light combat sorties, transport personnel and serve multi-mission roles. Under development is the KC-390, a large cargo and troop transport aircraft with in-flight refueling capabilities. Over 1,200 military-application aircrafts have been delivered to governments of 22 countries, including India and Thailand.

markets make it easier for airlines to discover the tremendous possibilities of these jets. In our region, E-Jets are in service with eight airlines in Japan, China, Taiwan, India and Australia. The program's success is truly global: 600 E-Jet deliveries ordered by 53 airlines from 35 countries.

INVESTING IN SINGAPORE

Embraer has invested some US$75 million by establishing a local infrastructure to support our growing customer base in Asia. In addition to the company's offices on Orchard Road, it is continually expanding its service network around the globe. At Changi, Embraer has training facilities that includes a flight simulator for pilots and a cabin simulator for flight attendants. At the Airport Logistics Park Free Trade Zone, the company's warehouse stocks over 20,000 spare parts that are dispatched around the region to keep customer fleets reliable. But the strength of any organization is its people and Embraer's team of 50 reflects the cultural diversity of Singapore. The company relies heavily on local staff to help navigate the complexities of business in the region.

I'm confident that, over time, Embraer will succeed in unlocking the enormous potential in Asia Pacific as it has done in the USA, Canada, Europe, Australia, and the Middle East. The company has been able to change perceptions about smaller airplanes in those countries and even about Brazil, too. As Embraer grows its product portfolio and more travelers experience its commercial and executive jets in Asia, I believe people will come to realize that the company has the right size aircraft for the region.

EXECUTIVE AIRCRAFT ARE TIME MACHINES

Time is money and Embraer's line of executive jets is designed to save both. Since the company entered the business aircraft market in 2000 with the ***Legacy 600***, an airplane derived from the bestselling regional jet platform, Embraer has built families of airplanes that offer a wide spectrum of capacity and performance. The comfortable and functional interiors of these stylish aircrafts were designed in partnership with design offices like BMW Group DesignworksUSA and Priestman and Goode, UK, complementing superior performance reliability (inherited from the Company's commercial airplanes), as well as lower operating and maintenance costs. From the 4 to 6-seat ***Phenom*** jets in the entry/light category to the three versions of the ***Legacy*** that cover the midlight to super midsize classes, Embraer is introducing new tools to help corporate productivity. Crowning the collection of executive airplanes is the Lineage 1000, a full-size aircraft in the ultra-large jet category that delivers intercontinental range. The company has recently reinforced our sales and marketing structure for the Asian business aviation market with the appointment of José Eduardo Costas, Vice President, Sales and Marketing – Asia-Pacific, Executive Jets.

FINDING THE SWEET SPOT WITH COMMERCIAL JETS

Some 35 airlines in the Asia Pacific region have flown Embraer commercial airplanes since they were first introduced in Australia in 1977. Over a thousand 50-seat aircraft from the ERJ 145 regional jet family are in service around the world, but few have found their way to Asia. A restrictive regulatory environment prevented the early development of secondary markets, which suppressed the potential for small aircrafts. But all that is changing. Embraer's family of new-generation 70 to 120-seat E-Jets and the ongoing liberalization of Asian

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BRAZIL STUDENTS ON EXCHANGE PROGRAMME

TEXT LIONEL LIM **PHOTOS** DEAN, SANJEEV NAIR

"When people think of Brazil, they only think of the sun-kissed beaches and football-mad population. We are in fact more than just that."

*- Seeking to erase the misconception of many is **Victor Delaiba**, a 23 year-old final year computer engineering student from the University of Uberlândia*

In Singapore under the Program Jovens Mineiros Cidadãos do Mundo (Young Students from Minas Gerais – Citizens of the World Programme), Victor and 19 others were were specially chosen for the programme after a vigorous selection criteria, chief of which required them to consistently maintain sterling grades throughout their undergraduate years.

With the focus of this year's overseas students programme on information technology (IT), these 20 crème de la crème of their respective universities, namely the University of Uberlândia, Federal University of Minas Gerais, and Federal University of the Valleys of Jequitinhonha and Mucury major in computer engineering, computer science and information systems.

Bring home knowledge and Singapore experience and the fact that Singapore invests hugely in 'people-ware'

Currently in its fourth year of inception, students on this year's programme were naturally excited at the chance of being on an all-expense paid study immersion trip to Singapore. For all of them, it was their first time visiting. The highlight was the immersion programme at Republic Polytechnic (RP) with the RP students. As Professor Edgard Lamounier Jr, PhD, the accompanying professor of the delegation explains, RP students adopt a problem-based learning approach to solving issues.

From the day they enter as a freshman to the day they graduate, each student solves a problem a day. This being a different teaching and learning system from the current Brazilian educational system was cause for excitement and further exploration. Our Brazilian student guests also attended lectures at Nanyang Technological University (NTU) and National University of Singapore (NUS) Extension.

It was evident that the students were enjoying their stint in Singapore. In all honesty, it was not only study, lectures and attachment all the time. They squeezed in some time to explore the sights and sounds of town too. Singing praises of their host country during their four-week stint, the students were impressed by the clean, safe and organised Singapore model. These were indeed areas they felt their own country could emulate.

Ambassador Paulo Alberto Soares meet Edgard Afonso Lamounier Junior, Professor

Luiz Felipe Caires, a 22 year-old final year student from the Federal University of the Valleys of Jequitinhonha and Mucury was particularly appreciative of the fact that Singapore invests hugely in 'people-ware'. This, in his opinion, is definitely more important than investing in hardware or software.

When asked if she felt pressurised by being outnumbered by the number of boys in a predominantly male-oriented field of study, Carolina Bigonha, a 22 year-old final year student from the Federal University of Minas

From left: Lucas Batista Leite de Souza, Raphael Pena Cavalcanti, Thiago Nunes Coelho Cardoso, Lucas Clemente Vella, Henrique Coelho Fernandes

From left: Leandro Gomide Gandini, Douglas Eduardo Valente Pires, Diego Neves da Hora, Leornado Conegundes Martinez, Fernando Henrique Morais da Rocha

Gerais laughed. As one of only three female students on this programme, she welcomed the competition as it was a field of her choice because of personal interest, immense challenge and unlimited potential. "Everyone needs a computer. I like the maths behind it. I don't find it difficult."

Being selected for the immersion programme has far reaching positive spin-offs for all of them. Hailing it as an important milestone in their lives, the valuable overseas experience would be shared with their fellow undergraduates, friends and family when they return as they feel it's their moral obligation. Going a step further, Fernando Mattioli, a 24 year-old final year student from the University of Uberlândia enthused that he wished for more inter-country exchange programmes as such exchange programmes are mutually beneficial for both sides to grow together.

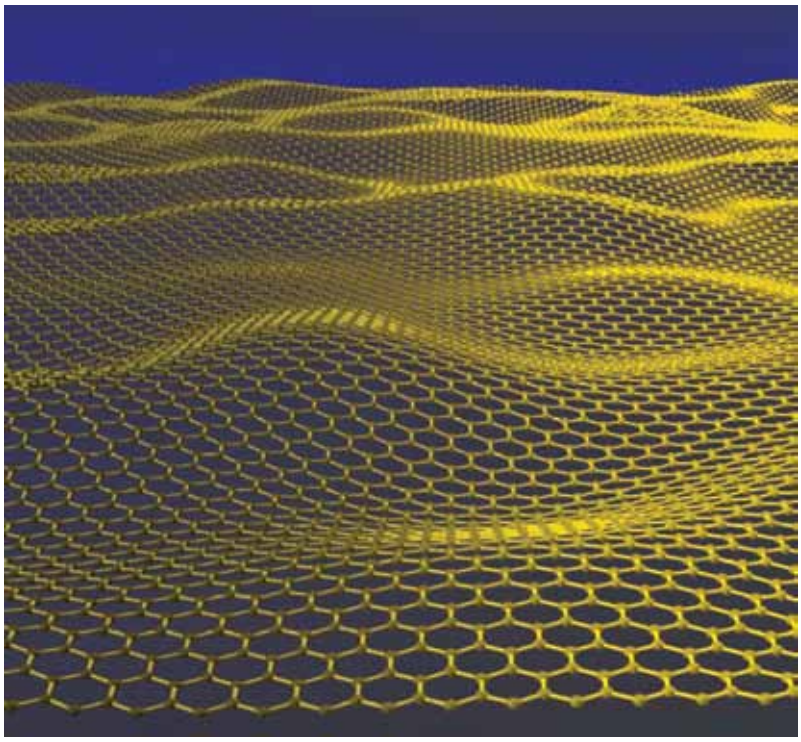
All students harboured high hopes of transforming Brazil in his or her little ways. While some aspired to become entrepreneurs, others were happy to remain in academia to educate the next generation. What impressed me most was the strong sense of rootedness amongst these youths as no one had any intention of migrating overseas. Working in other countries such as United States or even Asia was an option they would not rule out, but they would still return home after establishing their careers to start a family. Yes, home to all of them is still Brazil. And after speaking to them, Brazil indeed has much more to offer than the stereotype. As a developing superpower in the making, Brazil is flexing its muscles on the world stage in fields such as natural energy (think wind energy and tidal energy), genetics, agriculture, banking and cattle raising.

From left: Saulo Henrique da Mata, Alana Bueno Otsuka, Marcos Vinicius Guimaraês Martins Filho, Thatyene Louise Alves de Souza Ramos, Rodrigo Silva Oliveira

From left: Fernando Eduardo Resende Mattioli, Victor Hugo Benedetti Delaiba, Carolina Andrade Silva Bigonha, Daniel Galinkin da Gama Cerqueira, Luiz Felipe Vasconcelos Caires

Professor Lamounier Jr shared that Brazil has the most advanced medicine in South America and conducts an unprecedented number of transplants a day. Ever young at heart, he further added that he too was excited being in Singapore as he could witness different technology such as Android Linux based operating system and share his experience with his students back home.

The strong sense of wanting to share and do more good for their society shone strongly through the souls of the 20 young Brazilian ambassadors that one could not help but feel invigorated too. If there's one take-away from them, it would be for Singaporeans to have more fun as fun boosts creativity. Before leaving, Victor gave me a megawatt smile and said "I think maybe Singapore can have more pubs?" Back in Brazil, it is hip to hang around with friends at the many pubs where new ideas are hatched and explored further. We'll leave that for the batch of Singapore students to explore should they fly to Brazil for an attachment.



Artistic rendering of graphene

CARBON: LIFE AND PROGRESS

TEXT AND PHOTOS PROFESSOR ANTONIO H. CASTRO NETO

Human progress and development have always been marked by breakthroughs in the control of materials. Since pre-historic times, through the Stone, Bronze, and Iron ages, humans have exploited their environment for materials that can be either used directly or can be modified for their benefit, to make their life more comfortable, productive, or to give military advantage.

One age replaces another when the material that is the basis for its sustainability runs its course and is replaced by another material which presents more qualities (for instance, iron is lighter and stronger than bronze).

In the 20th century the advancements in material science have been so profound that the process of material "rise and fall" has accelerated tremendously. This process has shaped our lives in such a strong way that it is very hard to imagine what the world looked like before jet planes, computers, and the global unification that the internet has created. This revolution in the way we interact with the world has its origin in the advances made in the beginning of the 20th century, with the advent of quantum mechanics.

Quantum physics and chemistry are the cornerstones for the understanding of how materials behave electronically and structurally, and hence, the basis for essentially everything that surround us. Since quantum mechanics was firmly established theoretically and experimentally, a plethora of new materials, which today make our way of life, have been created: plastics, rubbers, glasses, metallic alloys, semiconductors, superconductors, and magnets, just to mention some. The so-called "silicon age" dominated the last half of the 20th century and extends to this very day. The domination of control over semiconductors such as silicon was fundamental for the creation of the globalised world as we know it. Ultra fast computers and communication are at the heart of our society and have spread over the entire world. Even in the most recondite places of our planet there is a human being either using a computer, a cell phone, or a GPS. However, just like any other material that human beings have played with over the millennia, semiconductors such as silicon and gallium arsenide are reaching their "sunset".

The International Technology Roadmap for Semiconductors (ITRS), which is sponsored by the five leading chip manufacturing regions in the world (Europe, Japan, Korea, Taiwan, and the United States), and has the objective of ensuring cost-effective advancements in the performance of the integrated circuit, has clearly identified an end-of-life for scaled CMOS (complementary metal–oxide semiconductor) technology around the year 2022. The causes for the demise of silicon-based technology range from the purely physical to the economical. Silicon, as a crystalline solid, ceases to exist beyond the 10 nanometers ($1nm = 10^{-9}m = 10$ Å) because thermal fluctuations make atoms fluctuate strongly as the dimensions of the material are reduced, transforming crystals into amorphous material.

Moreover, in order to reduce the volume of a microchip by a factor of two requires a factor ten of investment in new technology. However, in a recent workshop, sponsored by ITRS, on "Beyond CMOS" technologies, the final reports states that "Carbon-based

nanoelectronics has a major advantage in that science and technology resulting from accelerated development in CNT (carbon nanotubes) and GNRs (graphene nano-ribbons) for MOSFET (metal–oxide–semiconductor field-effect transistor) applications can provide substantial basis for exploring and developing new physical phenomena in these materials "Beyond CMOS" information processing paradigm." There are several reasons why ITRS has identified carbon for the "Beyond CMOS" technologies.

From the history of materials perspective, it seems almost natural to think about carbon as the next platform for micro-electronics. The first transistors developed in Bell Labs during the 1950s were based on germanium

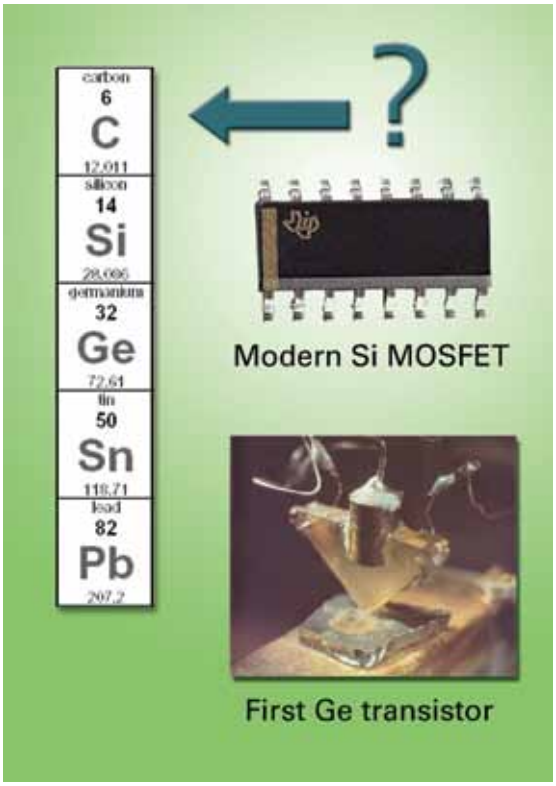


Fig. 1 Column VI A of the periodic table of elements and its transistors.

and only later did they evolve to silicon. The reasons for the replacement of Germanium (Ge) by Silicon (Si) involve the fact that Si, after enough processing, can be made very pure and hence conduct electricity with much less energy loss, and at a much lower cost. Si cost $10 per kg compared to Ge, which was almost at $1,800 per kg - compare with carbon, in graphite form, that costs around $ 2 per kg. In fact, Brasil is one of the largest producers of graphite in the world, and the company Nacional do Grafite is the single largest company in graphite manufacturing.

A quick look at the column IV A of the periodic table of elements (see Fig. 1) shows that evolution from Ge to Si is associated with a jump of one row in the table and that the ultimate material in this column is exactly carbon. Moving up in the column IV A has many physical and chemical implications that can be understood from basic quantum mechanics. The chemical bonds in Si crystals are weaker and longer than in carbon (C) crystals. C has the highest melting and sublimation temperatures of all elements at about 3,500^0 C, while Si melts at 1,700^0 C. These differences help to understand why C is the element responsible for life while Si only appears in rocks and sand on earth.

One of the most interesting aspects of C chemistry is that it can form a large number of different crystal structures, or allotropes. In Fig. 2 we show some of the most important allotropes of pure carbon. Close inspection of these allotropes show that they all have the same basic motif, namely, the hexagon of a benzene ring. Linus Pauling, one of the greatest chemists of the 20th century, was one the first scientists to understand the nature of these allotropes and in his 1950s masterpiece *The Nature of the Chemical Bond*, Pauling describes graphite (the only allotrope that was known during this time – another example on how fast material science has evolved in the last 50 years) as made out of a layers of a "giant molecule" that we today call graphene. Graphene can be considered the "mother" of all allotropes shown in Fig. 2: graphite is stacked graphene, nanotubes are rolled graphene, and fullerenes are wrapped graphene. In fact, most of the electronic and structural properties of these allotropes can be derived from the basic properties of graphene.

Graphene was the last allotrope to be discovered. While fullerenes were discovered in the 1980s and nanotubes in the 1990s, graphene was only discovered in 2004 by the group led by physicist Andre Geim from Manchester University in England. Amazingly, graphene was discovered by exfoliation (or peeling) of graphite using what nowadays is called "scotch tape technique". Since this discovery the field has evolved significantly to the production of graphene via more controlled techniques such as chemical

> *"In fact, human beings have been producing graphene since the 16th century, when the pencil was invented. Every time one produces a pencil trace in a piece of paper the graphene layers become stuck in the paper fibers. However, because graphene is only one atom thick it cannot be easily located."*
>
> **- Antonio H. Castro Neto**, *Professor of Physics at Boston University*

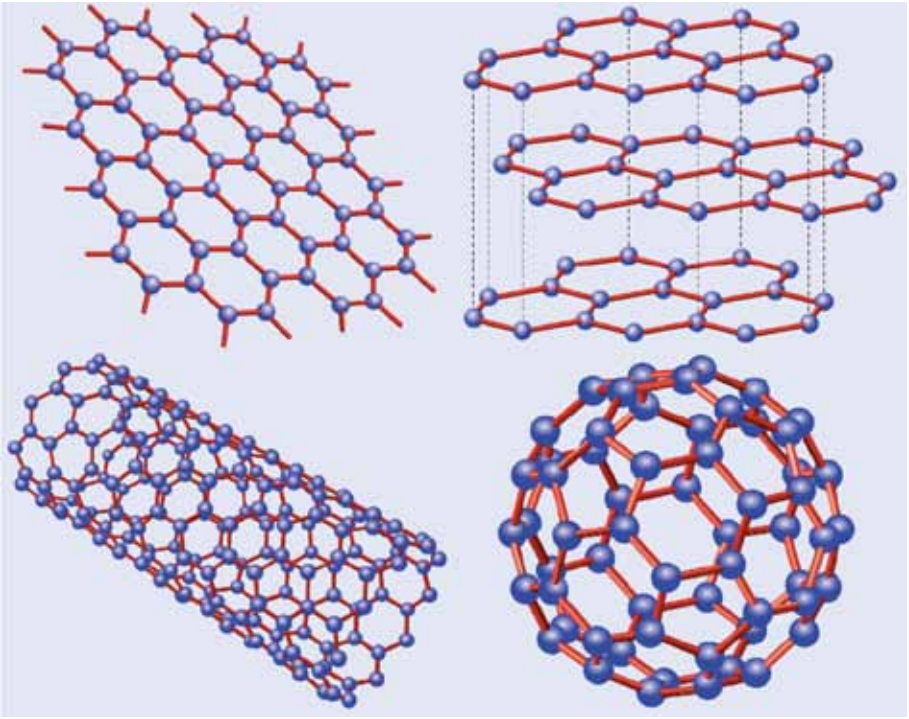
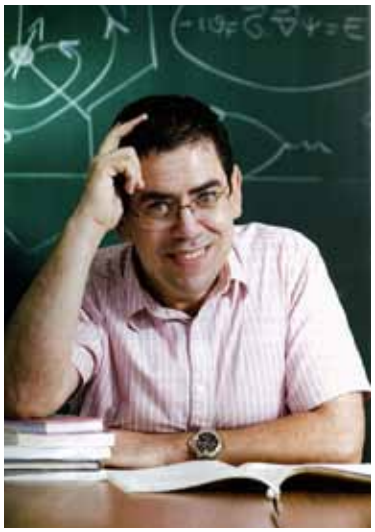


Fig 2. Carbon allotropes. Top left: graphene; top right: graphite; bottom left: nanotube; bottom right: fullerene

vapour deposition (CVD) and nowadays graphene wafers can be produced routinely. Although graphene is one atom thick, it can be seen with an ordinary optical microscope when placed on top of a properly chosen SiO^2 substrate. It has the properties of a good metal, although its electronic properties do not fit the standard theory of metals.

Graphene is also resistant against extrinsic impurities because its chemical bonding is very specific and consequently graphene conducts electricity better, with less energy loss than any other semiconductor, including Si, and even Cu. Moreover, graphene is one of the strongest materials ever measured (the only other material that is comparable in strength is diamond – another carbon allotrope), nevertheless it is one of softest (the only example of a metallic embrane). It can be used as an ultra-sensitive nano-mechanical resonator besides being highly impermeable. Hence it is not surprising that so many high-tech industries are interested in developing graphene-based devices for a plethora of applications, from high-frequency transistors to surface coating. However, there are still major challenges that have to be surmounted before graphene can play any role in the electronic industry. It is actually unreasonable to think that graphene will replace Si in the electronic industry anytime soon. However, it is fair to imagine that some form of modified graphene can be incorporated into the semiconductor industry in the near future.

The National University of Singapore is taking a conscious step towards becoming one of the world leaders in graphene research by investing on a center for Carbon Science and Technology. Carbon is the perfect material to reap the benefits of the huge investments Singapore has made in material science, biochemistry, and pharmacy. While in terms of concentration of expertise in material science, equipment and infra-structure, Singapore is one of the best places in the world, a unifying challenge and opportunity has been missing. Carbon research prepares Singapore to develop a diversified portfolio in investing in a carbon program that will be the future of high end technology. Graphene research is one of the fastest growing areas in science, but it is still a young field. There are many challenges and opportunities for investigation, because graphene is not a standard material. A myriad of applications, many of them pure fantasy, have been spread all over the internet as a quick search would reveal. For these, and many other reasons, the graphene field has been surrounded by a lot of hype but also hope. Hope that this material is unveiling the dawn of a new era where carbon, the element of life, also becomes an element of progress.

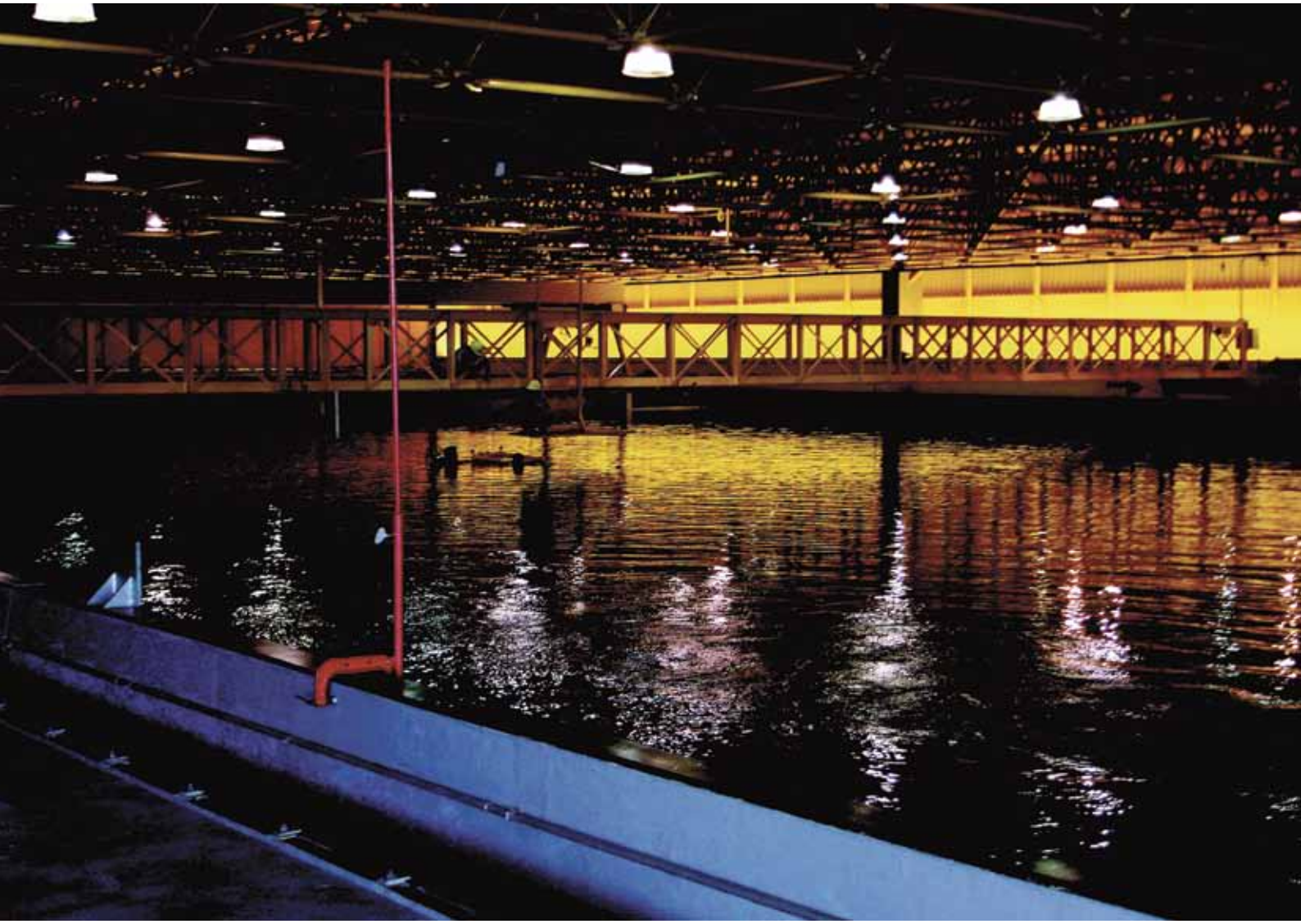


Antonio H. Castro Neto is a Professor of Physics at Boston University, USA. He received his Ph.D. from the University of Illinois at Urbana-Champaign, USA, in 1994 and was a postdoctoral fellow at the Institute for Theoretical Physics in Santa Barbara, California, USA. He is a Fellow of the American Physical Society, Divisional Associate Editor for Physical Review Letters, and Colloquium Editor for Reviews of Modern Physics. Castro Neto is currently a Visiting Professor at the National University of Singapore.

BRAZILIAN EXPERIENCE IN MARINE RESEARCH

TEXT HERBERT DRUMMOND **PHOTOS** BRUNO BUYS

The year 2003 saw the entry of a marvel facility into operation. An enormous ally in naval and oceangoing research in Brazil, the Laboratory of Ocean Technology, or LabOceano as it is known in the facility, is located in the premises of the Institute Alberto Luiz Coimbra of Postgraduate Studies and Research in Engineering (COPPE-UFRJ), in Rio de Janeiro.

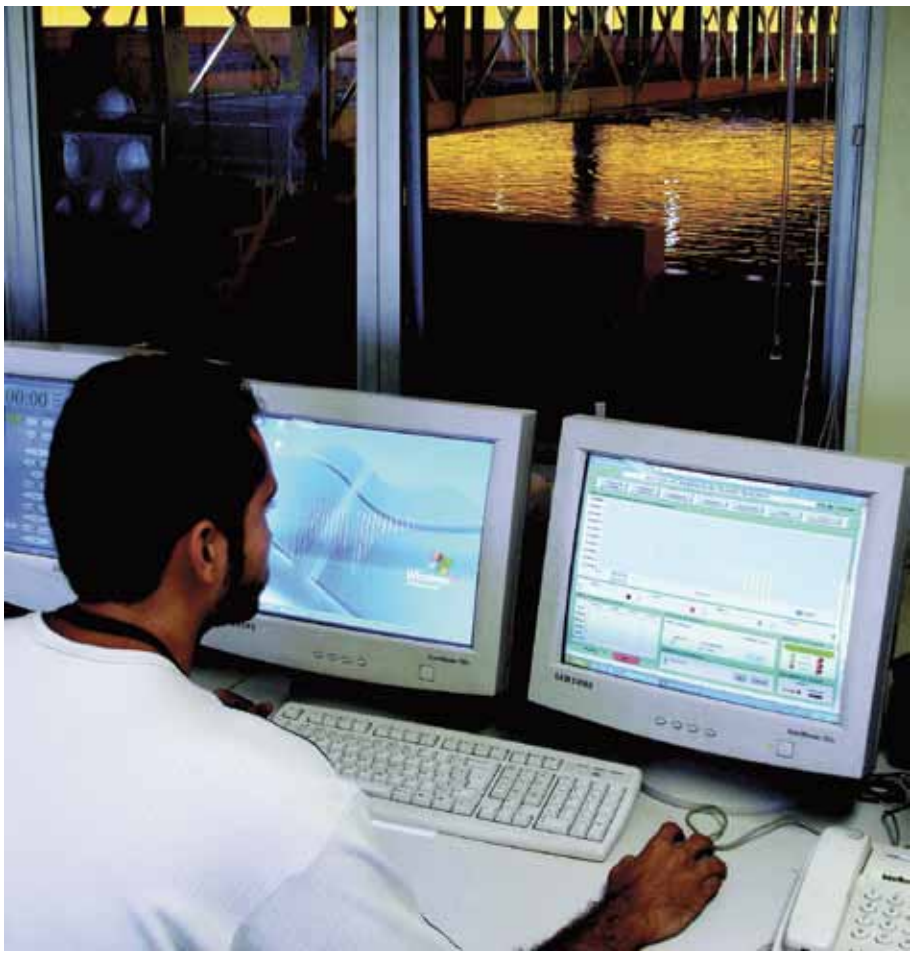


Overall view of the tank: the catwalk in the middle allows the transit of operators and the placement and removal of models in water

Built with resources exceeding US$ 6 million stemming from the Fund for the Sector of Oil and Natural Gas (CT-Petro) and from the Foundation for Support to Research in the State of Rio de Janeiro (Faperj), LabOceano became part of the arsenal of COPPE to strengthen vessel and ocean research in Brazil. The laboratory has harboured various vessel and platform models at times and, with the discovery of enormous oil reserves in the pre-salt layer, one can forecast a considerable increment in the work of the scientists linked to the laboratory, bearing in mind that the complete exploration of the pre-salt fields will demand the employment of dozens of floating production units.

LabOceano was conceived initially as a tank of 40m by 30m, with a 15m depth and a central sinkhole-pit of 5m in diameter and an additional 10m depth. Thus, the tank is capable of holding more than 18 million litres of water and producing waves of 0.5m in height. The laboratory comprises further an 8m long beach, the function of which is to disperse the energy generated by the waves, and the possibility of altering the configuration of the bottom of the tank, thus simulating in a more efficient manner the outline of the ocean floor at great depths.

In order to improve even further the research capability of LabOceano, the laboratory is incorporating systems for simulation of maritime currents, which will join the existing mechanisms that reproduce waves and winds, completing thus the three core forces of nature to which a platform or vessel is subjected when in operation offshore. In this manner, it is hoped that the new models go through experiments that are more complete and more complex, in which all forces may act jointly, emulating in a manner closer to reality the actual forces encountered in the high seas and at points of extreme depth.



The main control room, which houses the computers and software that monitor the tank and collect data from tests

COPPE, however, is not limited to LabOceano. Created in 1963 with the objective of aiding in the scientific development of Brazil, the institution consists today of 113 modern laboratories, which form the largest laboratory complex of the country in the realm of engineering, undertaking research that ranges from biofuels to the magnetic-levitation train (Maglev) and from high-performance computing to medical-application engineering.

As the largest centre for research in engineering in Latin America, COPPE has qualified more than 9000 M.Sc. and PhD graduates and comprises today of 300 lecturers, 3000 students and 350 staff, whether researchers or technical and administrative personnel. On average, the team at COPPE publish 1500 scientific articles per year, in national and foreign magazines. Conscious of the importance of science and technology for the development of the country, in 1970 COPPE created a structure devoted to the issue of partnerships and contracts with companies, public and private bodies and non-governmental organisations, both national and foreign.

Recently, a delegation from A*STAR led by Mr. Lim Chuah Poh, Chairman of this body, the research agency of Singapore, visited the premises of COPPE and had the opportunity of getting to know the numerous lines of research in which the Brazilian entity is engaged. In Mr. Lim's view, there are various possibilities of cooperation between Brazil and Singapore that could be explored by means of an alliance between COPPE and A*STAR, one of them being the utilisation of LabOceano by Keppel Offshore & Marine Ltd. for studies regarding platforms for oil drilling, particularly those intended for Petrobras, Brazil's oil giant.

Another important area visited by the delegation from A*STAR was the Laboratory of Submarine Technology, directed by Professor Segen Farid Estefen, in which the Singaporean

researchers watched a demonstration of numeric and experimental surveys on the mechanical behaviour of rigid and flexible submarine pipes, fundamental for the extraction of oil in deep waters, a technology over which Brazil has vast command. Additionally, in this same laboratory, Professor Ilson Paranhos Pasqualino presented research on the production of energy by means of distinct motions of the ocean waters: waves, tides and marine currents.

there would be, furthermore, the additional advantage of utilisation of the facilities for desalination of sea water, which would create an important ally in the attainment of independence from the external supply of potable water.

Part of the technology to which the delegation from A*STAR had access in its recent visit to Brazil is bound to be presented at the Brazilian booth during the 'Clean Energy Expo Asia 2009', a component of the 'Clean Energy Week' that will take place between the 18th and 20th of November 2009, at Shangri-La Hotel, in Singapore. This can be another excellent opportunity to further discussions on the potential for cooperation between the two partners located at antipodal ends of the planet.

Model of the wave energy generator undergoing tests in LabOceano

For now, the most advanced and promising field is the one of generating power by means of the motion of sea waves, which already has a prototype at an advanced development stage. The advantages presented by the model are many, the most important ones being the utilisation of an inexhaustible and abundant source of clean energy, in tandem with the low disturbance of the marine life on location and the low cost of installation and of maintenance. For Singapore,

THE OCEAN TANK IN FIGURES

Length: 40m
Width: 30m
Depth: 15m
Central well: 10m extra in depth, with 5m in diameter, reaching a total depth of 25m.
Capacity: 18 million litres. The tank utilises fresh water, supplied by the State Company of Water and Sewage (CEDAE). Thereafter, corrections are performed in the tests regarding the deviation introduced by the absence of salt. Five panorama-sized windows located at a 4m depth allow the viewing of what goes on at the bottom, during the tests.

WAVE GENERATOR

Maximum height of waves: 0.5m
Periodicity: 0.3-5.0s
Peak periodicity: 0.7-2.0s

WIND GENERATOR

Quantity: 8 generators
Maximum speed: 12m/s

CURRENT GENERATOR

Maximum speed: 0.25 m/s on the surface and 0.1 m/s at the bottom

SHORE

Length: 8m. The artificial beach bears a parabolic profile (beginning above the water level, it slopes into submersion, akin to a real beach) and the function of dissipating the energy from the waves, curbing their bouncing and returning to the model, which would disturb the tests. It was implemented in a position opposite to the wave generator.

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IN CONVERSATION WITH DR MARCO

TEXT NOMITA DHAR, ADRIEL CHENG **PHOTO** DR MARCO

Nomita Dhar and Adriel Cheng speak to Dr Marco Faria Correa on life in Singapore and the pursuit of happiness

John Kenneth Galbraith once wrote: "There is certainly no absolute standard of beauty and that is precisely what makes its pursuit so interesting". It is to that end that Dr Marco Faria Correa has distinguished himself with a level of excellence and dedication that precedes his reputation. Renowned for his pioneering use of endoscopic methods in plastic surgery, Dr Marco has come a long way from the boy in the 1960s who would admire the doctors in Brazil for the sheer respect that they commanded from society. As a boy, Dr Marco has always been equally passionate about science and the arts but was heavily influenced by his parents on the pragmatism of a career in medicine.

Coinciding with his decision to embark on a career in medicine was the establishment of Brazil as a capital in plastic and reconstructive surgery in the 1960s, with names like Dr Ivo Pitanguy attracting medical tourists from Hollywood and beyond. By then, there was little doubt that Brazil was the place to go in the pursuit of aesthetic excellence. Even by this time, Dr Marco had little bearing on which area to specialise in medicine and began as a general practitioner. With time, he began to discover his talents in surgery and very naturally, the path ahead began to make sense. Plastic and reconstructive surgery would allow Dr Marco to combine his passion for art and science and he began with microsurgery, defined by countless days of practice. In his thirties, Dr Marco rose to fame when he successfully operated on two boys who had their arms severed. With a newfound desire to perfect his skills, he furthered his training in microsurgery in the University of Tokyo for six months and was exposed to a whole new world of much more advanced technology and equipment. What really struck him was the guiding principle of perfection that defined the Japanese

Dr Marco Faria Correa, Plastic Surgeon

way, especially in plastic surgery. With new-found perspective and insight, Dr Marco returned to Brazil to build on his work. Finally, the big break came when Dr Marco successfully pioneered the use of endoscopic methods in plastic surgery. The radical move resulted in international patents for equipment, groundbreaking procedures and growing invitations from abroad to teach and speak on his new discovery.

It was at this juncture that Dr Marco first came to the Republic of Singapore, in 1996, for a surgical demonstration, at the invitation of leading doctors in the field. The place and people must have left a good and lasting impression, as Dr Marco found himself back in Singapore in 2000, but as a full practicing doctor this time. Ever since, he has never looked back. When asked about the decision to establish himself here, the most key motivating factors Dr Marco cited were geographical accessibility

When asked about what he loved most about Brazil, he instantly said "the people". The warm and genuine nature of Brazilians are some of the qualities that makes it a traditionally tourist friendly environment with quality resorts.

for international clients, solid medical infrastructure, efficiency of general infrastructure, an English speaking environment, attractive taxation schemes for foreigners and the well educated people of Singapore. He also observed that to thrive in Singapore, one had to be very intelligent and competitive.

When asked about what he loved most about Brazil, he instantly said "the people". The warm and genuine nature of Brazilians are some of the qualities that makes it a traditionally tourist-friendly environment with quality resorts. It comes with little surprise then that Brazil today is one of the largest and fastest growing emerging economies. Often cited together with China, India and Russia in the acronym BRIC, Brazil has certainly no shortage of investment opportunities, be it investment in oil and gas, consumer goods or simply your own beauty. More interestingly, to this very day, Brazil retains its status as capital of plastic surgery. Dr Marco jokingly said that once you live in Brazil, you never want to leave. After speaking to a warm, sincere and talented Brazilian like Dr Marco, you need not ask why.

BUILDING DREAMS

TEXT NOMITA DHAR **PHOTOS** SURBANA

In an interview with Ms Nomita Dhar, Regional Director of Surbana, Mr Stephen Ho, talks about what Surbana stands for, and elaborates on his experience with working in Brazil. For over half a century, Surbana has been helping to build residences to most of the Singaporean families. Now it is aiming at the Brazilian market.

***Mr Stephen Ho**, Regional Director (Middle East/Africa/Latin America)*

Q: SIR, WHEN WAS SURBANA STARTED AND WHAT IS SURBANA ALL ABOUT?

A: Through half a century of not just building, but nation-building experience, Surbana has been an instrumental thread in Singapore's development into one of the world's most vibrant living and business environments.

It has planned and developed over one million residential units for over 80 per cent of Singapore's population. Spread across 26 integrated townships, each township is well planned, creatively designed and constructed with high quality standards. Residents enjoy great conveniences as amenities are within easy reach. Each township is supported by comprehensive infrastructure such as transportation, commercial, industrial, institutional and recreational facilities.

Corporatised in 2003 from the Housing & Development Board, Singapore's public housing authority, which had won world recognition in high density, high quality housing, Surbana's mission is to transfer the building consultancy expertise of the HDB into the wider private development market. Surbana is now a wholly owned subsidiary of Temasek Holdings.

Delivering meaningful differences to create legacy solutions: Our experiences have hardwired us with some key principles in how we approach our work. We seek to:

- Make a meaningful difference to our clients, the community and the environment
- Embrace a challenge no matter how daunting
- Nurture lateral thinking, ground-up experience and constant improvements
- Strive for legacy solutions. We have been taught by our nation building experience to make every solution an enduring one.

Q: COULD YOU TRACE THE ROOTS AND HISTORY OF SURBANA FOR US?

A: Our heritage: Back in the 1960s, Singapore was a sea of slums and squatters, with more than half a million in need of basic housing. HDB was established to resolve the nation's housing needs. By the late 1980s, over 80 per cent of the population owned their own homes, designed and built by HDB. The challenge was no longer to house people, but to improve the quality of housing and provide a living, and lively, environment for communities to thrive. New towns were developed, old precincts were upgraded. Today, Singapore supports a 4.99 million population on merely 710.2 sq km of land.

Through the years, much knowledge, expertise and experience were gained. On July 1, 2003, various technical and design functions were corporatised as Surbana Corporation.

More than a builder of homes, Surbana is a transformer of dreams into reality — seeding and fostering vibrant communities in Singapore.

Channeling experience into new solutions: Surbana has drawn on its experience in creating housing for over

80 per cent of Singapore's population to become a global company with leading professional capabilities across the entire value chain, from urban planning to architectural, engineering, cost and contracts management, project management, estates maintenance and other ancillary services.

With 17 international offices and a 2000-plus staff strength, Surbana's projects now span 90 cities in 26 countries.

One of the cornerstones of our business philosophy is to carry out urbanisation with a sensitivity to the environment. Business operational decisions are made with environmental sustainability outcomes in mind.

Treelodge@Punggol, Singapore, Residential Development

Q: APART FROM BRAZIL, WHICH ARE THE OTHER COUNTRIES SURBANA IS IN BUSINESS WITH?

A: Aside from making our mark in Singapore, we have projects in China, India, Southeast Asia (such as Malaysia, Indonesia, Brunei and Vietnam), the Middle East (such as Qatar, UAE and Bahrain) and even in Russia and Africa. Surbana now has 17 overseas offices in key cities in Asia and the Middle East.

Q: HOW HAS YOUR EXPERIENCE IN BRAZIL BEEN SO FAR?

A: The experience in Brazil has been above and beyond our expectations. It is a very beautiful country, blessed with breathtaking landscapes, vast natural resources and rich culture. Brazil is truly a land of opportunities. The business environment is very friendly and welcoming and we look forward to great business opportunities.

Q: WHAT ARE YOUR EXPANSION PLANS?

A: We look forward to share our heritage building experience and legacy solutions, which we have accrued in the last 50 years of helping Singapore "house a nation", with Brazil and, in turn, contribute towards its economic and social growth.

For now, Surbana is actively exploring opportunities in the Rio De Janeiro and Sao Paulo markets, as well as the Central-West Region, with the help from the Embassy of Brazil in Singapore and International Enterprise Singapore.

We are very thankful to Ambassador Soares and the IE Singapore team who have kindly assisted and supported us from the beginning. They have shared invaluable information with us that helped us better understand the local market conditions and this has shortened our learning process.

Q: DO YOU THINK THERE IS A CULTURAL DIFFERENCE BETWEEN DIFFERENT PARTS OF BRAZIL?

A: What is amazing is the similarities the Brazilians share with Singaporeans, which is the diversity of the population. Brazilians are very amiable and dynamic. They have a zest for living and are very proud of their country.

Q: WHAT ARE THE PITFALLS YOU WOULD LIKE SINGAPOREAN INVESTORS TO LOOK OUT FOR WHILE DOING BUSINESS WITH BRAZIL?

A: As with any business expansion to any other market, it is important that we take the time to understand the core needs of our clients and how we can deliver meaningful value that multiply the objectives of the projects that clients entrust to us.

It is essential that Singaporean investors also seek out Brazilian business partners that they are comfortable working with. To be successful, the partners they choose should share the same vision and goals for the business venture, in addition to having great mutual trust and chemistry.

Q: WHAT IS THE MESSAGE YOU WOULD LIKE TO CONVEY THROUGH THIS PUBLICATION TO OUR READERS?

A: Brazil's growth potential in the coming years is tremendous and we are excited about the possibilities of contributing and being part of this growth. We are constantly looking out for opportunities in our areas of experience and expertise. We are committed to the Brazilian market and hope to establish a long term presence, and develop lasting relationships with like-minded partners who share our values and philosophy.

RIO 2016

TEXT MINISTRY OF EXTERNAL RELATIONS OF BRAZIL **PHOTOS** http://www.rio2016.org

On October 2, 2009, in Copenhagen, the International Olympic Committee elected Rio de Janeiro as the Host City of the Olympic Games of 2016, which represents a historical landmark for Brazil and for the Olympic movement. Just like Africa, South America is the only continent that has never hosted the Olympic Games. Added to the Brazilian candidacy, there were the competitor cities of Chicago, Madrid and Tokyo, all rivals from countries that had already had the opportunity of organising an Olympiad.

The Olympic Games in Rio de Janeiro are also singular as they are conducive to a social and economic transformation of the city of Rio de Janeiro, and of Brazil as a whole. The infrastructure works expected for the Olympic project shall generate a lasting heritage for the city, and the age-bracket structure of the Brazilian population, made of a great quantity of children and youngsters, will be able to have contact with the Olympic values.

The candidature of Rio 2016 enjoyed wide support amongst the members of the International Olympic Committee, garnering 66 votes in the final scrutiny, against 32 for Madrid, the adversary in the final round of voting. Most important, as well, was the dissemination of the report from the IOC Evaluation Commission that visited the four candidate cities and highlighted positive points for the Brazilian candidacy, such as the unmitigated support from the three levels (Federal, State and Municipal) of government for the project, the macroeconomic conditions of Brazil, and the concept and vision of the Games, which favour sport as a tool for social inclusiveness.

The presence in Copenhagen of various Brazilian upper-echelon authorities, including President Lula, in addition to figures linked to sport, such as João Havelange (FIFA and IOC management) and Pelé, was considered an essential factor for the success of Rio's bidding.

As it was emphasised in the Brazilian campaign, Brazil gathers not only a people passionate about sports, but also unforgettable political and economic conditions necessary to organise a memorable edition of the Olympic Games.

MUQUECA DE PEIXE

FISH STEW

RECIPE FROM CURUCA'S RESTAURANT :
(www.cantinhodocuruca.com) in Meaípe, ES

PREPARATION:

Into a clay-pot, throw the oil, onions, tomatoes and paprika powder. Wait until it acquires density. Then, place the fish cuts. It is not necessary to add water. Add the salt, the olive oil and the lemon juice. Allow it to boil for 10 minutes. Add the shrimps and let it cook for another 5 minutes. Add the coriander, and it's ready! Note: should the stew yield scarce sauce of itself, or stick to the pot's bottom, add water.

INGREDIENTS:
600g fish (suggested: sea-bass or snook)
400g peeled shrimps
100g onions
100g tomatoes (in cubes)
2 tablespoons of lime juice
2 tablespoons of oil
2 tablespoons of olive oil
salt, paprika powder, pepper and coriander, at will

Companhia Bachiana Brasileira in Raffles Hotel Jubilee Hall

BRINGING THE BEST OF BRAZILIAN CONCERT MUSIC TO SINGAPORE

TEXT CARSTEN FELDKAMP **PHOTOS** TÂNIA MEULENBERG

Compositions from top Brazilian contemporary classical composers in a programme commemorating 30 years of Brazil in Singapore

Singapore, September 25, 2009 - Singaporeans were treated to a feast of Brazilian contemporary music when the Bachiana Brasileira Orchestra performed a programme featuring some of the country's best-known composers, whose music though classical in style bears the unmistakable fragrance of Brazil.

Presented by the Embassy of Brazil in Singapore, the concert - which celebrates distinct periods and styles of Brazilian Concert Music in the last 100 years - was held to commemorate the 30th anniversary of the establishment of the Brazilian Embassy in Singapore.

Compositions from famed composers such as Heitor Villa-Lobos, Dimitri Cervo, Breno Blauth, Henrique de Curitiba,

Conductor Ricardo Rocha

Antonio Carlos Gomes and César Guerra-Peixe, who covered a vast range of music genres such as orchestral, chamber music and opera, were on the programme.

The highlight of the programme was a tribute to arguably the most famous Brazilian composer, Heitor Villa-Lobos, including two pieces from his famed set of nine suites of Bach-inspired melody infused with Brazilian folk music, *Bachianas Brasileiras*. In memory of his work, this year marks the fiftieth anniversary of the death of Villa Lobos.

The oldest piece on the programme was the 1894 composition *O Burrico de Pau* from Antonio Carlos Gomes, a composer best known for his operas. Gomes's *Il Guarany* was produced at La Scala, Milan, in 1870 and has recently been performed and recorded by Placido Domingo. Another item is minimalist composer Dimitri Cervo's *Pattapiana*, named after the Brazilian flute icon Pattapio Silva who died tragically young.

The programme was performed by the Bachiana Brasileira Orchestra, the arts-performing arm of the Sociedade Musical Bachiana Brasileira (SMBB), or Companhia (Cia.) Bachiana Brasileira, set up in Rio de Janeiro in 1999. Today, the Cia. Bachiana Brasileira occupies a unique position in the Brazilian musical scene due to the high standard of quality it observes, be it Brazilian colonial and European baroque or contemporary music. The Brazilian newspaper O Globo nominated Cia. Bachiana Brasileira's concerts as being among the best in 2007 and 2008.

Its productions have been recorded live since 2001 at the Cecília Meireles Concert Hall in Rio de Janeiro and broadcast locally by MEC Radio and all over the country by Brasil TV as part of the programme 'A Grande Música' (The Great Music).

In 2007, Cia. Bachiana Brasileira brought to the public the DVD 'Villa-Lobos - Quadros de uma Alma Brasileira' (Pictures of a Brazilian Soul), with his chamber Choros, plus Sexteto Místico (Sextuor Mystique) and Nonetto. It was hailed as the best classical music DVD of the year by a major Brazilian newspaper, Folha de São Paulo.

The ensemble is conducted by Ricardo Rocha, the head of the Cia. Bachiana Brasileira, who studied piano under Werther Napolitano at the Villa-Lobos College of Music and Orchestra, conducting under Roberto Duarte at the Federal University of Rio de Janeiro, and holding the title of Kapellmeister from Germany.

An authority on as well as ambassador of Brazilian concert music, Rocha has recorded many albums and written articles on the genre. He is also a professor of conducting and the author of the book *Regência, uma arte complexa* (Conducting, a complex art, 2004) adopted as a text in Brazilian music schools, as well as articles published in Portuguese and German.

"I am most delighted to present to the Singaporean public the Bachiana Brasileira Orchestra, a most distinguished Brazilian chamber music group that has been holding a very special Asian tour this year and performing for the first time in Singapore," said Paulo Alberto Silva Soares, the Ambassador from Brazil to Singapore.

"They come to this splendid city at a very timely moment, when we are celebrating 30 years of Brazil-Singapore diplomatic relations and in a way paying homage to the commemorative celebrations being held in Brazil for the greatest Brazilian composer of all times, Heitor Villa-Lobos, who passed away 50 years ago."

A TRIBUTE TO HEITOR VILLA LOBOS (1887-1959)

TEXT HERBERT DRUMMOND

"I consider my music as letters I wrote to posterity, without expecting an answer."

- Heitor Villa Lobos,
Brazilian musician

Son of the cello lover Raul Villa Lobos, Heitor was born in Rio de Janeiro, on 5th March 1887. Since early age, his father tried to stimulate the passion for music in the young Villa Lobos. As a consequence, the future conductor would learn to play the cello using a viola, a smaller instrument more adequate to the size of the young child.

Raul died early, in 1899, but not without passing to the child his passion for music, to the despair of his mother, who wanted Heitor to become a medical doctor. Therefore, in 1900, he was already composing short pieces for cello and, soon after, he was already earning money as a cello player in cinemas, theatres and cafés in Rio de Janeiro.

The passion for music, however, found no boundaries, and Heitor was desperate to get in contact with distinct rhythms and sounds. Thus, he started to travel through Brazil in search of new sources for his music. When he returned to Rio de Janeiro in the late 1910s, he joined the National Institute of Music, but his disappointment and lack of adaptation to the traditional patterns of academic music forced him to leave the course.

Villa Lobos's early works were slightly influenced by Puccini and Wagner, but it was Stravinsky who left the most important impression. In his music, the Brazilian genius always mixed the European roots with Brazilian folk aspects, using sounds of the forests, natives, samba and other genres found throughout the country.

In the 1920s, Villa Lobos headed for Paris, where he lived from 1923 to 1924 and from 1926 to 1930, with an allowance provided by one of the richest families in Brazil, the Guinle family, who owned Rio's landmark Copacabana Palace. In a demonstration of his strong personality, when arriving in Paris, the conductor declared "I am not here to learn, but to show what I have done". The Paris years saw Heitor's reputation achieve international recognition as the most original and important musician of Latin America.

In 1930, President Getúlio Vargas invited Villa Lobos to return to Brazil, where he could fulfil his dream of introducing choral singing as a course in high schools all over the country.

That same year, the composer started to write the most famous part of his work, the cycle of the "Bachianas", which comprises 9 pieces, written between 1930 and 1945. There, Heitor, who used to say that "my first book was the map of Brazil", tried to produce a Brazilian version of the Brandenburg Concertos, using rhythms or music forms from distinct Brazilian regions.

All the movements of the "Bachianas" received two titles: one "Bachian" and another Brazilian.

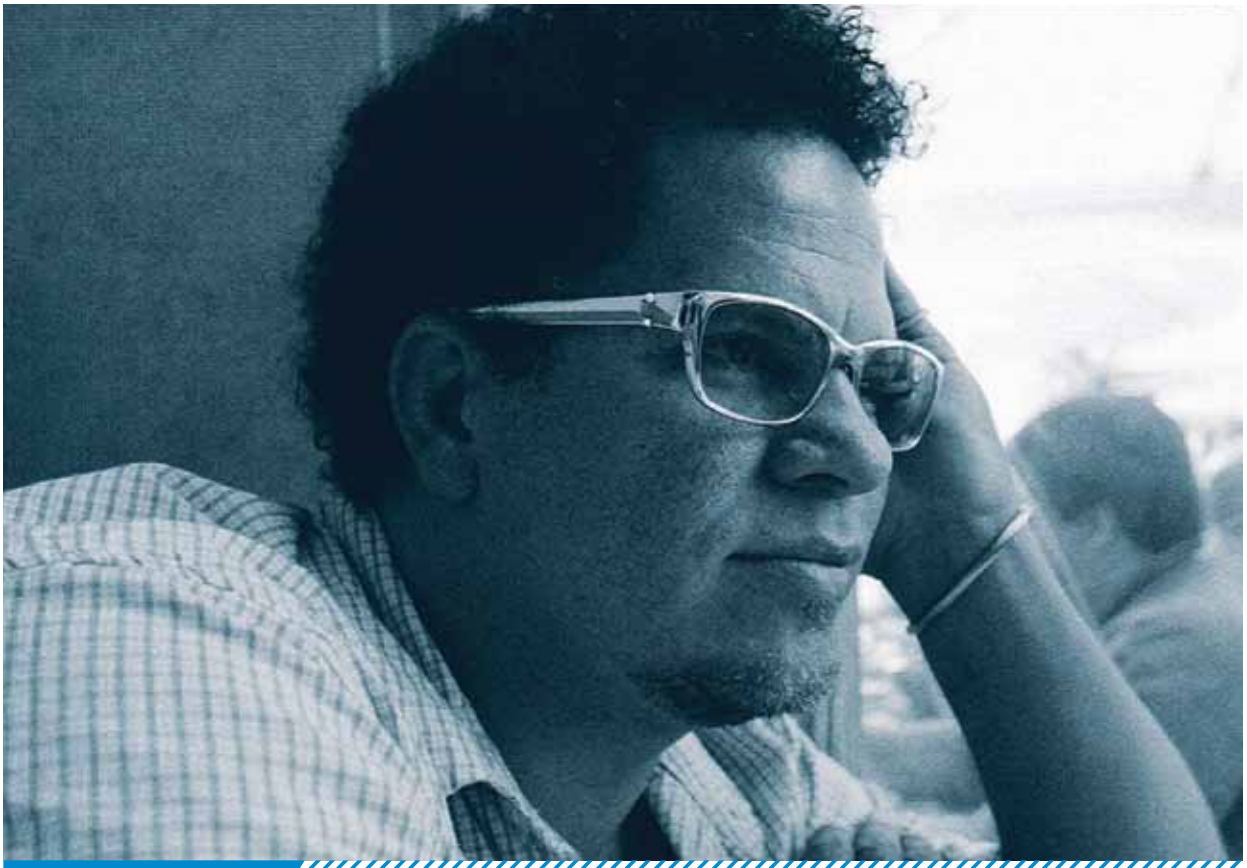
If the 1920s were the Paris years, the 1940s would be the New York years. In the beginning of the forties, Villa Lobos departed for New York, where he conquered the admiration of North America and established himself as a renowned conductor there.

In 1947, still in New York, he underwent the first surgery to treat a cancer in the bladder. He recovered and resumed composing at an even stronger pace. In 1959, however, already ailing, he decided to return to Brazil and, a few months later, he died at home.

Companhia Bachiana Brasileira Chamber Orchestra

During his life, Heitor Villa Lobos conducted eleven Brazilian orchestras and almost seventy others in Argentina, Austria, Belgium, Canada, Chile, Cuba, Denmark, England, Finland, France, Germany, Greece, Israel, Italy, Mexico, the Netherlands, Portugal, Spain, Switzerland, The United States, Uruguay, and Venezuela.

Celebrating 50 years since the great master Villa Lobos left this life into immortality, sitting along other important composers of his kind, the Embassy of Brazil offered to Singapore a glimpse of Villa's work. On 8th October 2009, in the Raffles Jubilee Hall, the Cia. Bachiana Brasileira played a mix of the most important Brazilian composers, being the centrepiece some of Villa Lobos's most important repertoire.



IT'S TIME FOR BRITTO IN SINGAPORE

TEXT AND PHOTOS CHINO TAYLOR

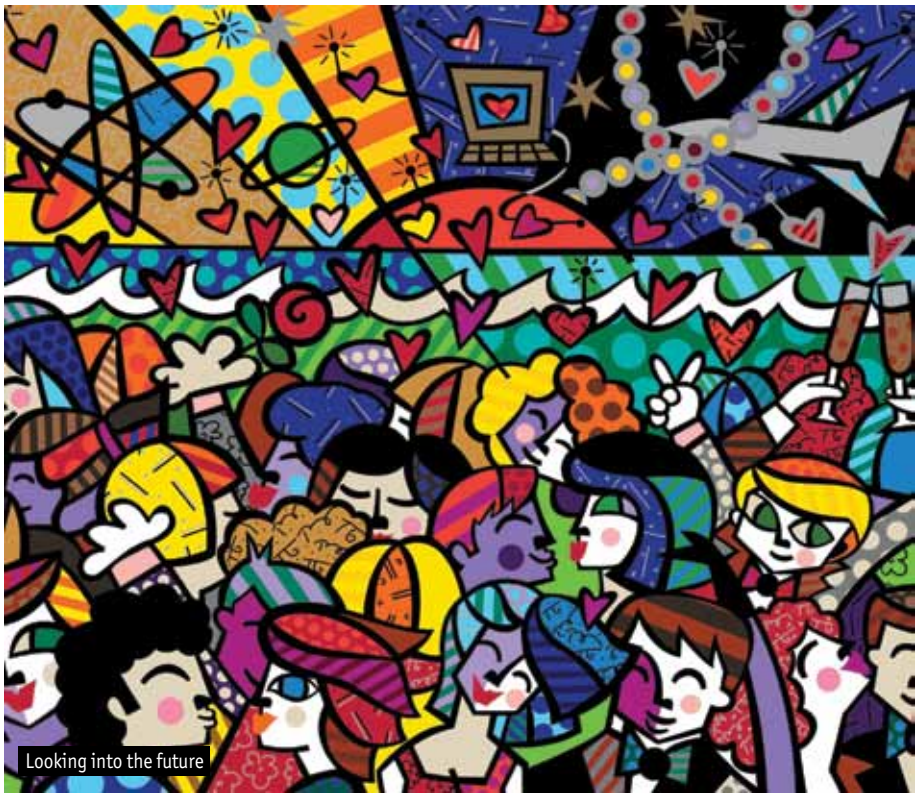
> *"For me, art can reflect the celebration of the simple and good things in life. This is most important to me!"*
>
> **- Romero Britto,**
> *Brazilian artist*

ROMERO BRITTO is a renowned Brazilian artist residing in Miami, USA, and fetching lavish media attention and high prices in the US market. He had already had his paintings and other works displayed, on several occasions, at the Singaporean branch of the London-based Opera Gallery, although he himself had never joined the exhibits of his work in Singapore. This year was different: not only has Opera Gallery shifted into a magnificent facility at the iconic brand-new mall ION@Orchard, but his personal presence added colour to his already colourful exhibits. At a cocktail held in September at the Gallery to mark this freshly renewed start, he graced the function with his warm personality and his wishes for Singapore.

BRITTO creates a completely new expression that reflects his optimistic faith in the world around him. Eileen Guggenheim wrote it best when she stated "Chagall's floating lovers seem to foreshadow so many of Britto's buoyant exultant couples." Alluding to influences of early and modern masters, Britto's pulsating colours, pop themes and commanding compositions have led him to become the premier contemporary artist of his generation.

BRITTO had an extremely modest lifestyle while growing up amongst eight brothers and sisters in Recife, Brazil. However, his innate creativity allowed Britto to fill his life with vibrant colours and images of a beautiful world. His canvas was any scrap of newspaper or cardboard he could find. Britto had

Welcome sculpture



Looking into the future

an inordinate passion to excel, and prospered academically. Still, Britto's artistic nature eventually led him to seek experiences outside the classroom.

BRITTO travelled to Europe in 1983 to examine firsthand the art of the masters. After exhibiting in a few galleries and private shows, Britto was encouraged to travel to the United States where Pop Art was flourishing. Britto moved to Miami and set up a studio open to the public. With an unshakable resolve and belief in his art, Britto spent the next few years exhibiting and attracting the attention of many. Then, in 1989, Absolut Vodka selected Britto to design an artwork with their famous logo. Britto's participation added his name to a list of artists, such as Warhol and Haring, also commissioned for the famed vodka campaign. Britto's studio in Miami Beach was quickly becoming known as the place for people of all ages and walks of life to meet and acquire a unique style of art.

BRITTO today is represented in galleries and museums across five continents, from Singapore to Dubai, to London and New York. Opening in Paris at the Salle de Notre, Louvre Museum in December 2008, Britto unveiled 'Journey' to hundreds of guests. Other recent shows and projects are just as impressive. "… Matisse channeling Picasso," wrote the New York Times when Britto created a living canvas performed by the Cirque du Soleil in celebration of Super Bowl XLI.

BRITTO'S artwork on canvas has found the spotlight in numerous corporate commissions and noted art collections. Also an accomplished portrait artist, Britto's works include likenesses of Ernest Beyeler, founder of Art Basel, as well as the late Robert Rauschenberg. Britto's sculpture installations are currently installed across the globe, including locales, such as JFK airport, New York, and Hyde Park, London. His diverse resume also includes several series of postage stamp designs for the United Nations Postal Administration and a postage stamp in Brazil that celebrates the 450th Anniversary of the city of Sao Paulo.

BRITTO is an artistic activist for charitable organisations worldwide and, most of all, an artist who believes "art is too important not to share." Britto donates to over 250 charitable organisations a year. Not a silent activist, Britto was a selected speaker for the arts at the World Economic Forums in Davos, Switzerland, in 2006, '07 and '09. Britto is committed to developing and supporting the powerful role art will continue to play in world issues.

Follow me

BRAZILIAN BOSSA IN SINGAPORE

TEXT AND PHOTO CARSTEN FELDKAMP

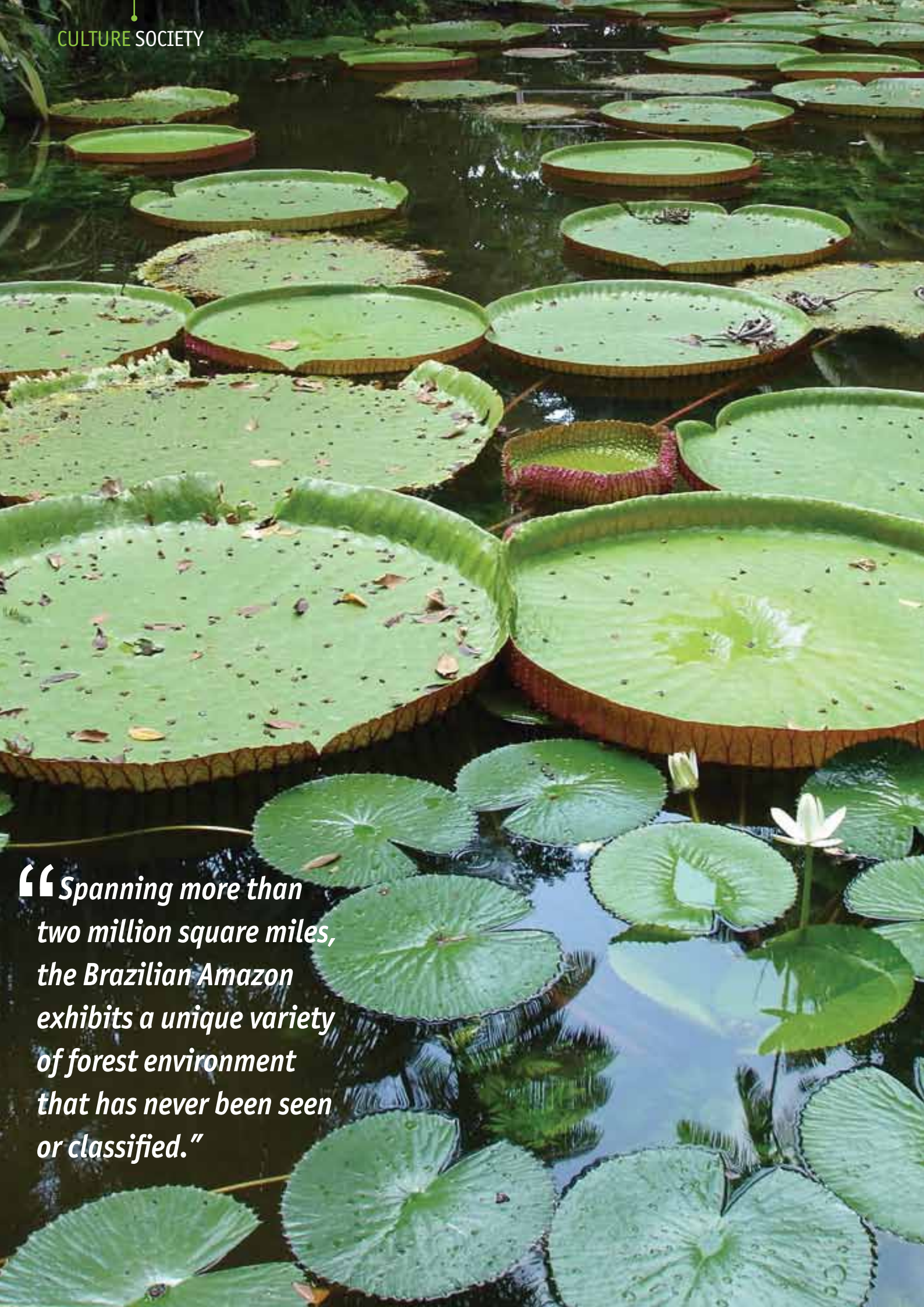
Latin Grammy Award nominee BossaCucaNova proved their reputation as one of Rio's hottest bands by taking the Esplanade stage, and Singapore, by storm, with their mix of traditional bossa classics jazzed up with modern rhythms and electronica.

For one evening, on September 9, 2009 the Esplanade was transformed into a Rio dance hall—the audiences got into a Brazil state of mind as they stood up and grooved to the lush mix of music during the show 'Brasilidade'.

In Singapore, DJ Marcelinho DaLua, bassist Márcio Menescal - son of first generation bossanovista Roberto Menescal - and keyboardist Alexandre Moreira were joined by flame-haired regular singer Cris Delanno, Dado Brother on the percussion and Flavio Mendes on the guitar.

They performed songs from their various albums: ***Revisited Classics***, the Latin Grammy nominated ***Brasilidade*** and ***Uma Batida Diferente,*** taking on bossa classics such as Tom Jobim's ***Agua de Beber***, ***Aguas de Marco*** and ***Samba de Uma Nota*** as well as Roberto Menescal's ***Telefone***. They even delved into soul territory, with a rendition of ***Ela Partiu*** by the Brazilian 'King of Soul' Tim Maia. It still wasn't enough - the audience screamed for more and the band obliged with an encore.

At the end of the show - organised by Schema International, who have brought top Brazilian musicians such as Gilberto Gil, Roberto Menescal, Marcos Valle, Joao Donato and Bebel Gilberto to Singapore - fans got a chance to get albums of the band autographed by band-members. All the CDs and DVDs available for sale were sold out. The lines for the autographs were long and snaking, with the band members signing and posing for photographs with fans long after the concert ended.



"Spanning more than two million square miles, the Brazilian Amazon exhibits a unique variety of forest environment that has never been seen or classified."

AMAZÔNIA IN SINGAPORE

TEXT AND PHOTOS FAREARTE

Celebrating 30 years of the establishment of the Embassy of Brazil in Singapore, the city will host a world-renowned exhibition directly from the Brazilian Amazon from November 20th - 30th.

Amazônia in Singapore will present the exuberance of the Amazon Forest, its environment and its diversity to the public and opinion makers of Singapore. The activities have been selected as a means of presenting the diversity of the Amazon Region, its natural riches, its culture, its paradigms and the sustainable solutions to the challenges it faces. Brazil is home to the largest area of continuous tropical forest on the planet. This forest, while playing an important role in regulating the world's climate, has a delicate natural equilibrium that is under constant threat. In a timely way, the civil society, the Brazilian Government and the private sector have taken important steps in the direction of sustainable development of the region.

Spanning more than two million square miles, the Brazilian Amazon contains plants, animals and forests that human eyes have never seen previously. It is remarkable that 83 per cent of the forest area has been preserved. As climate change has become a reality, the Brazilian Amazon holds an important key to the world's future: its ability to regulate the Earth's climate.

The programme in Singapore intends to "transport visitors inside the forest," says Alvise Migotto from Fare Arte, the producer of ***Amazônia in Singapore***, adding, "We have designed a new and special programme for Singapore." The content presented is the result of years of research and continuous updating of the most recent information from the main institutions working in the Amazon.

AMAZÔNIA: DIVERSITY AND REALITY - MAIN EXHIBITION AT THE ARTS HOUSE

The Library of City Hall will host this display, where visitors can experience firsthand the sights, sounds and wonders of life in the Brazilian Amazon, including its biodiversity, people, villages and cities. Both ancient and modern artists share the Brazilian Amazon as their source and inspiration, and make fashion and furniture in an environmentally responsible way from materials found in the Brazilian Amazon. This exhibit will also present governmental and civil society efforts to overcome damages caused in the Amazon by the global pressure of consumption, and further display the relationship between the world's largest region of continuous tropical forest and the atmosphere and climate regulation, as well as sustainable alternatives that exist in the region to harmonise development and preservation.

IN 2009, BRAZIL CELEBRATES...

TEXT HERBERT DRUMMOND, CARLOS BRIAN PHEYSEY

300 YEARS

1709: THE "FLYING PRIEST" PRESENTS TO THE WORLD THE FIRST MODEL OF A HOT AIR BALLOON

In April 1709, in the Diplomats Room of the Royal Portuguese Palace, before King D. João V and other high-ranking officials form the Portuguese Crown, Father Bartolomeu de Gusmão presented, for the first time ever, his major invention, the aerostat, which would go on to be known as the hot air balloon.

The priest, who served as literary inspiration to writers such as José Saramago, who portrayed him in his novel "Memorial do Convento", was born Bartolomeu Lourenço, in Santos, Brazil, in 1685, and later adopted the surname Gusmão. He attended the Jesuit Seminar of Belém da Cachoeira, in Bahia, where several other important religious figures studied before and after him. There, he developed a vast array of inventions. One of those was a device that could transport water from a shallow river to a 100m high reservoir.

After finishing the Seminar, Gusmão headed for Portugal, where he enrolled in Coimbra University and developed research in the areas of Physics and Mathematics. Rumour has it that, after seeing a soap bubble hovering above the hot air yielded by a candle, he realized that it would be possible to produce a contraption to travel through the air. Then, he petitioned the King for a grant of privilege over his "flying machine" and, four months afterwards, in April 1709, he presented it before an astonished audience in the Royal Palace.

Gusmão filled a little balloon made of thick dark paper with hot air produced by a small bonfire in a clay bowl, causing it to rise to a height of four metres. Afraid that the gadget would burn the curtains, the King ordered two servants to bring it down. However, the name of the priest was already inscribed in the history of science. Afterwards, he continued his experiences with hot air balloons, producing bigger apparatuses and testing them.

Like many other geniuses, Gusmão died in poverty, as an indigent with a fake name, in November 19, 1724, in Spain.

BANCO DO BRASIL: 200 YEARS OF HELPING BRAZIL GROW

200 YEARS

Banco do Brasil Cultural Centre

By the end of 1807, fleeing Napoleon's troops commanded by General Junot who invaded Portugal's homeland, the Portuguese Royal family, protected by the British Armada, decided to go to its Brazilian colony, in an astute movement that helped Prince D. João to keep his kingdom alive. Along with the nobles, came a large host of people and resources to implement and maintain the throne in Brazil, for as long as peace was not restored in Europe.

When the court arrived in Brazil, in 1808, the Regent Prince, D. João, started taking steps to establish his Empire on the other side of the Atlantic. In Brazilian history, this period became known as "colonial invertion", whereby the colony became the metropolis. One of the main measures was the creation of Banco do Brasil, which was founded on October 12th, 1808, by a royal decree.

The capital of the Bank was to consist of 1,200 shares, which were offered to the most important businessmen and wealthy individuals in the colony. In January 1809, D. João demanded the support of the governors of the Brazilian provinces, and instructed them to find shareholders for the institution. Thus, on December 11, 1809, Banco do Brasil started its activities in a building at former Rua Direita, corner of Rua São Pedro, in Rio de Janeiro.

1909: BIRTH OF THE "MULTI-TALENTED MAN WHO MADE TROPICAL LANDSCAPING AN ART" (NYTIMES)

100 YEARS

Roberto Burle Marx (August 4, 1909, Sao Paulo - June 4, 1994, Rio de JAneiro) was a Brazilian landscape designer (besides being a painter, ecologist and naturalist), born of a mother fond of gardening and a father who was a designer, combining both influences into his future work. He replaced European-style formal gardens with Brazil's lush tropical flora, whose designs of parks and gardens made

WORKS OF BURLE MARK

- Landscape design of some gardens in the public buildings of Brasília
- Ministry of Army - water garden and excellent use of concrete forms
- Foreign Affairs Building
- Ministry of Education - roof garden completed in 1937. Marx gained international recognition and admiration for this abstract design.
- Copacabana promenade - pavement landscape, large scale (4 km long) mosaic completed in 1970 on the famous Rio de Janeiro beach (influenced by Portuguese pavement, ***Calçada Portuguesa***)
- Ibirapuera Park, São Paulo, 1954
- Flamengo Park - large public park in Rio de Janeiro built on a landfill
- Venetian Palace – design at entrance, and extreme use of scale
- Parque del Este, Caracas, Venezuela
- Cascade Garden, Longwood Gardens, Pennsylvania, USA
- Biscayne Boulevard, Miami, Florida, USA (completed posthumously)
- Peru Square, Buenos Aires, Argentina (demolished)
- Kuala Lumpur City Centre (KLCC) Park, Kuala Lumpur, Malaysia
- Casa Forte Square (Praça de Casa Forte), Recife, Pernambuco-Brazil

him world famous. He introduced abstract landscape architecture to Brazil, becoming known as a modernist nature artist and a public urban space designer, designing parks and gardens worldwide, including one close to Singapore, the Kuala Lumpur City Centre Park.

While studying painting in Germany, he often visited the Dahlem Botanical Gardens and first learned about Brazil's native flora. Upon returning to Brazil in 1930, he began collecting Brazilian plants in and around his home. In 1932, Burle Marx designed his first landscape, the hanging gardens for a private residence designed by architects Lucio Costa and Gregori Warchavchik. Mr Costa himself was to be commissioned many times by the Brazilian Government's official architecture, which encouraged Burle Marx to provide gardens for his own creations. Along with Lúcio Costa, Burle Marx excelled in the roof garden of the Ministry of Health and Education in Rio, and then became Director of Parks of the city of Recife. There he used not just tropical flora but also species of that huge arid northeastern region of Brazil. In 1949 he acquired the 365,000 sq m estate Barra de Guaratiba (just outside of Rio de Janeiro) to house his plants. This property was donated to the Brazilian government in 1985 and became a national monument called Sítio Roberto Burle Marx, with over 3,500 species of plants.

Sítio Roberto Burle Marx

He designed the gardens for Brazil's Ministry of External Relations in Brasília, the capital, and the beachfront promenade of Copacabana beach in Rio, featured in Singapore's Arts House a year ago. His work extended throughout Brazil, later being commissioned by orders in Latin America, USA, Europe and beyond.

In his 3000 landscaping projects, he took a multidisciplinary view of landscaping and used curvilinear and rectilinear shapes and blocks of Brazilian plants for colour. Much of his work has a sense of timelessness and perfection. His creations were each unique expressions of thought. His aesthetics were often nature-based, for example, never mixing flower colours, utilisation of big groups of the same specimen, using native plants and making a rocky field into a relaxing garden. He was very interested in each plant's character and what effect that has on the whole garden. He stated further that "A garden is a complex of aesthetic and plastic intentions; and the plant is, to a landscape artist, not only a plant [...] but also a colour, a shape, a volume or an arabesque in itself."

He spent a lot of time in the Brazilian forests where he was able to study and explore. This enabled him to add significantly to the botanical sciences, by discovering new rocks plants, for example. At least 30 plants bear his name. Last but not least, he campaigned to save the rainforest that was so dear to him.

THE CENTURY OF THE BRAZILIAN BOMBSHELL

100 YEARS

Carmen Miranda was born Maria do Carmo Miranda da Cunha, in Marco de Canaveses, Portugal, on February 9, 1909. Her family moved to Brazil before Carmen was one year of age and she never went back to her birthplace, spending almost her entire life between Brazil and the United States, where she was nicknamed "the Brazilian Bombshell".

Carmen's father established himself in Rio de Janeiro, where he opened a barber shop. His passion for opera influenced his children, hence Carmen, who adopted the name after Bizet's masterpiece, soon started to sing and dance.

In 1929, Carmen was introduced to composer Josué de Barros, who started promoting her and, in that same year, she recorded her first albums with the German recorder Brunswick. By 1930, she was already considered Brazil's most important singer. In 1933, she signed a two-year contract with Radio Mayrink Veiga, becoming the first Brazilian singer to do so. Before her, other radio stars were paid for each performance at a time.

Her international career started in 1933, when she went to Buenos Aires for a short period. Next year, she returned and stayed for a month in B.A. making presentations at Radio Belgrano. In 1936, after her first movie *Alô, Alô, Carnaval* in which she sang along with her sister Aurora the famous song *Cantoras do Rádio*, they started sharing their time between Brazil and Argentina. Three years later, she signed a contract to go to Hollywood, where she arrived in May 4, 1939, on the eve of the Second World War.

In the United States, Carmen was immediately recognised as a great star, presenting herself before President Franklin D. Roosevelt during a banquet in the White House and starring in 13 Hollywood films. As a result, in 1946, she was the most well paid actress in Hollywood and the top female tax payer in the United States. She would act in Cuba and Las Vegas and returned constantly to Brazil. Her shoes and hands are engraved in the Hollywood Walk of Fame along Hollywood Boulevard, near the Chinese Theater.

Carmen died early, on August 5, 1955, at the age of 46, in Beverly Hills. Her body was transferred to Rio de Janeiro, where 60,000 people attended her mourning ceremony in the town hall of the then Capital of Brazil. More than half a million people escorted the body to Cemetery São João Batista singing *Taí*, one of her major successes in a soft voice.

According to Heitor Villa Lobos, the most important Brazilian composer of all time: "No Brazilian can ignore what Carmen did for Brazil abroad. She spread our language, taught people who have never heard of us to sing our songs and love our rhythms. She will always mean a lot for us."

If you want to dig deeper into Carmen Miranda's life and work, and also find other beautiful pictures such as the ones displayed in this article, please visit Carmen's best website in the net at:

www.carmen.miranda.nom.br

Afonso Eduardo Reidy

Pedregulho Residential Building

100 YEARS

AFONSO EDUARDO REIDY: FORM AND REASON OF AN EXPLORER OF PLASTIC POSSIBILITIES

Afonso Eduardo Reidy is one of the most important Brazilian architects of the twentieth century. He was born in Paris, on October 26, 1909, to an English father and a Brazilian mother. He moved to Rio de Janeiro at an early age and, when he was 17, he started studying in the National School of Fine Arts, where he graduated as an architect.

Highly influenced by Le Corbusier's ideas, he joined the group of architects who, by the end of the 1930s, designed the building of the newly born Ministry of Education and Health (see our feature on Roberto Burle Marx). In this task, he worked side by side with Oscar Niemeyer under the supervision of Lúcio Costa and the collaboration of Le Corbusier himself.

Still in the 1930s, he started teaching in the same school where he graduated, leading the courses of design and urban planning, and

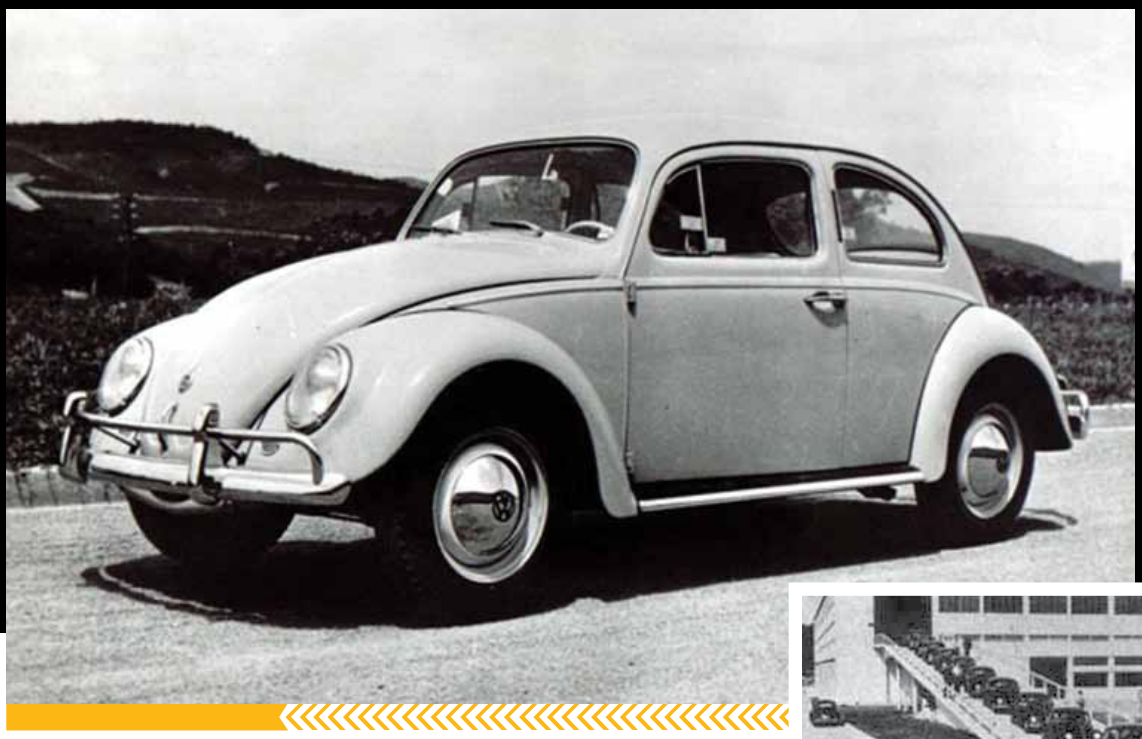
Modern Art Museum – Rio de Janeiro

contributed to the rise of a generation of architects that would become known as "Carioca School" – the "school of thought from Rio de Janeiro". Reidy is considered a pioneer in the introduction of modern architecture in Brazil and, as a chief architect and director of the Urban Department of Rio de Janeiro's city administration, he was responsible for several important urban projects, such as the Modern Art Museum of Rio de Janeiro (MAM), built between 1954 and 1959.

Along with the design of MAM, it is important to mention the Pedregulho Residential Building, considered very advanced when it was opened due to its spatial concepts and the priority given to the leisure and companionship equipments.

BRAZILIAN PASSION: 50 YEARS OF THE FIRST "FUSCA" MADE IN BRAZIL

50 YEARS



Brazil and Volkswagen's Beetle had a love affair that began in the 1950s. The *Käfer* - the German nickname "beetle" was to take other forms abroad - had existed in Germany since the 1930s thanks to Ferdinand Porsche, but took other shapes when sent to the wartime fronts and when the Allied air raids ravaged the factory. The company resumed business in the late 1940s and set up a branch in Brazil in 1953. Brasmotor, a Brazilian company, was already, in the early 1950s, assembling semi-finished sections imported from Germany, but the proper facilities were built only in 1957, in São Bernardo do Campo, right outside São Paulo. The factory began operations by producing the Kombi delivery van in 1959.

However, the great hit came later that same year. Unable to pronounce the German brand properly, Brazilians dubbed the Beetle a *Fusca*. The VW Sedan 1200 already harboured a degree of 54 per cent nationalisation in its parts' production-line. Mr. Eduardo Andrea Matarazzo, a leading tycoon of Brazil, became the first owner of a ***Fusca***, to be followed by millions of his countrymen.

In 1962, the car became the leader in sales, a position it maintained for two decades, until 1982. In 1972, the plant had completed its one-millionth car. In 1978, Germany discontinued production, but Latin America was still caught up in its own *Fusca* fever. However, outdated by the last third of the century, its versatility, price and ease of servicing remained unbeatable in Brazil. Brazilians remember their first driving lessons or dating their young partners within the confines of the beloved vehicle. Even police cars were *Fuscas*!

Between the 1960s and the 1980s (and ongoing into the future), Volkswagen's Brazilian engineers had already launched other vehicles, so that in 1986 the factory stopped making the Beetle, despite popular protests in favour of continuity. In 1993, President Itamar Franco sought to soothe the population by prompting the company to resume production of the ***Fusca***, but the company kept the effort only until 1996. By then, Three million units had been sold throughout its history. The love bond had been so strong that Brazil had been among the last to stop production (Mexico laboured on until 2003).

Nevertheless, one still sees dozens of thousands of *Fuscas* in Brazilian cities and motorways. Loyal owners can still find spares at autoparts dealers and the city of São Paulo, the automotive heart of the country, declared January 20 to be the official Day of Fusca!

50 YEARS RIO REBELS AGAINST SÃO PAULO: THE NEO-CONCRETE MANIFESTO

The main group of the Neo-Concrete artists

In the late 1950s, artists and intellectuals in Rio chose to express a rupture with Soviet-shaped art in Brazil by printing a public statement, the Neo-Concrete Manifesto of March 23, 1959 in the daily Jornal do Brasil. Penned chiefly by the poet Ferreira Gullar, the document aimed at breaking free from concretism as defined by vaguely Soviet-inspired intelligentsia in the city of São Paulo. The latter trend had embraced the "50 Years in 5" fast-paced development of President Kubitschek, the shift of the country's capital to the abstract-architecture marvel of Brasília, the neorealist New Cinema of Glauber Rocha and other such expressions. São Paulo came to the point of outlining a rigid ten-year plan for future work.

However, in Rio, the former shaped an alternative. For the intellectuals in Rio, it was not enough to transform the language of art. It was necessary to cast away all rules and shed the mental framing of art. Art was to become a non-object to be interpreted by the spectator oneself, who would manipulate the art according to one's own senses, whether in verbal, print, visual or contact-led language.

The manifest, broken down into a series of editions, invited readers to build their own perception, free from rules or limitations. The very newspaper adopted a graphic revolution that broke away from former frames. The group undersigning the document engaged in a self-criticism of its earlier excessive dogma that had prevailed heavily, perhaps encouraged in this move by news of the post-Stalinist reforms in the then USSR.

Beyond visual arts and a rupture with the framed margins that used to define a masterpiece, the movement proposed a literary revolution that would engage readers in more sensorial or even participatory ways. Art was no longer to be contemplated but something with which one ought to interact. A medley of materials was to be combined within one piece of art, for greater flexibility and engagement of the senses. Even ballet and music were to undergo radical experimentation.

Oddly, it was a return to the "pre-history of Brazilian art", as put by Mário Pedrosa. Neoconcrete art aimed to bring back the sense of the human, the sensibilities that Plato had denied. Real knowledge was to grow from integral perception with all senses, not through the narrowness of one angle. Art was to be like a living organism, devoid of props, pedestals, framework or rationalist precision. Art was supposed to be inserted so as to join real life and thus make humans a part of that art. Neoconcrete art was meant to link a person to one's work once more. Neoconcrete was all that joined the being and the feeling, involving one's entire body and senses. The spectator's participation would awaken a sense of empowerment to enact change. Such was the ambition of that Manifesto from half a century ago and yet so contemporary in its far-reaching implications for Brazilian experimentation.

IN 1959, THE BRAZILIAN NATIONAL BASKETBALL TEAM CONQUERS THE FIBA WORLD CHAMPIONSHIP

50 YEARS

In 1959, for the first time, Brazil conquered the basketball World Championship. After the disappointment of losing the finals to the United States in the preceding edition of FIBA World Championship in 1954, which took place in Rio de Janeiro, Brazil, the team led by coach Togo Renan Soares, nicknamed Kanela, recovered brilliantly and reached the top of the podium twice in a row, in 1959, in Santiago, and in 1963, in Rio de Janeiro again.

The preliminary round of the 1954 FIBA World Championship consisted of three groups of four teams each. In Group B, Brazil won the first game against Canada, 69-52, lost the second to the USSR, 64-73, and won the third against Mexico, 78-50, securing the passage toward the playoffs.

During the playoffs, Brazil and the USSR joined United States and Taiwan, from Group A; Bulgaria and Puerto Rico, from Group C; and Chile, that entered straight in the playoffs since it was the host country.

Coach Kanela

The Brazilian basketball team in 1959

All countries should play against one another, but Bulgaria and the USSR were eliminated from the competition for refusing to confront Taiwan, since they did not recognise it as a valid country.

The last game, against Chile, was exciting. Chile would be the champion if it overscored Brazil by a 12-point margin. Brazil, however, gave no chance to the hosts and, by the end of the halftime, the score was already 37-21. For the second half, Brazil returned even stronger and the final score was 73-49 for the green and yellow team. Amaury and Wlamir together scored 33 points, the first being the top scorer of the game with 17 points.

During the champions lap, the Chilean opponent, in a demonstration of fair play and good spirits, applauded enthusiastically the Brazilian team, recognising the superiority of the rivals.

The Brazilian team comprised Amaury Passos, Rosa Branca, Edson Bispo, Fernando Brobó, Jatyr Schall, Zezinho, Otto Nóbrega, Pecente, Waldemar, Waldir Boccardo, Wlamir Marques and Algodão. Coach: Togo Renan Soares, a.k.a. Kanela.

EMERSON FITTIPALDI: HERO OF TWO WORLDS

1974: Formula 1 twice-champion | 1989: Formula Indy champion

20 YEARS

35 YEARS

Emerson Fittipaldi belongs to one of the most important Brazilian dynasties of racing pilots. He is the youngest son of prominent Brazilian motorsports journalist and radio commentator Wilson Fittipaldi Sr and his wife, Józefa "Juzy" Wojciechowska, an ethnic-Polish refugee.

The passion for motorsports has been in the family blood since Emerson's early age. Wilson Sr was responsible for the first "Mil Milhas" race in 1956, in São Paulo, having been inspired by the 1949 Italian "Mille Miglia". He also ventured into piloting cars and bikes, but his career finished when he crashed his bike, a BMW 600, during a race and broke several bones. This was also the end of Emerson's early and promising career in bike racing. At 17, he was already an excellent bike pilot who had won

1989 - Emmo crosses the line to win Indianapolis race

several races in Brazilian motorcycle championships. However, after his father's accident, his mother forbade him to follow his dream.

Ms Juzy, herself was also a motorsport enthusiast and, among other important events, she took part in the Interlagos 24-Hour race in 1953, driving a Mercedes Diesel, and finished seventh.

Emerson was born in 1946, in São Paulo, and since an early age he devoted himself to motorsports racing. After racing Karts in team Willys, in 1967 he became the Brazilian champion of V-Formula, driving a prototype produced by himself and his brother Wilson Jr., who would also became a F1 pilot, and who is the father of Christian Fittipaldi, the third of the dynasty to achieve the F1 dream.

In April 1969, Emerson started racing in Europe, as a Formula Ford pilot, and won the English championship. In that same year he also won the Formula 3 championship and finished fourth in the Formula 2 European Championship. In 1970, he started his career in Formula 1, driving for team Lotus, and won the United States Grand Prix. In 1972, he became, for the first time, the F1 world champion, winning five Grand Prix and scoring 61 points against 45 of the already two-time world champion Jackie Stewart, his great friend who finished second. In 1973, Emerson finished second, after Stewart's third title, and, in 1974, he won for the second time, this year driving a McLaren M23 Ford V8.

1974 -Fittipaldi in the McLaren M23

In 1980, Emerson decided to leave Formula 1 after a series of problems following the creation of his own team: Copersucar F1. His career in motorsports, however, was far from closed. In 1984, he moved to the United States, this time to drive in Formula Indy. It took five years for Emmo, as he became known in the US, to become the first foreigner to win the title. He also won what is considered one of the most important races of the world, Indianapolis, winning twice, in 1989 and in 1993. Emerson opened the doors of Formula 1 to other important Brazilian pilots, such as Nelson Piquet and Ayrton Senna, who conquered three titles each. The trio is responsible for the eight Brazilian champion trophies in the world's most important racing category.

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Iguassu Falls, Paraná

Bonito, Mato Grosso do Sul

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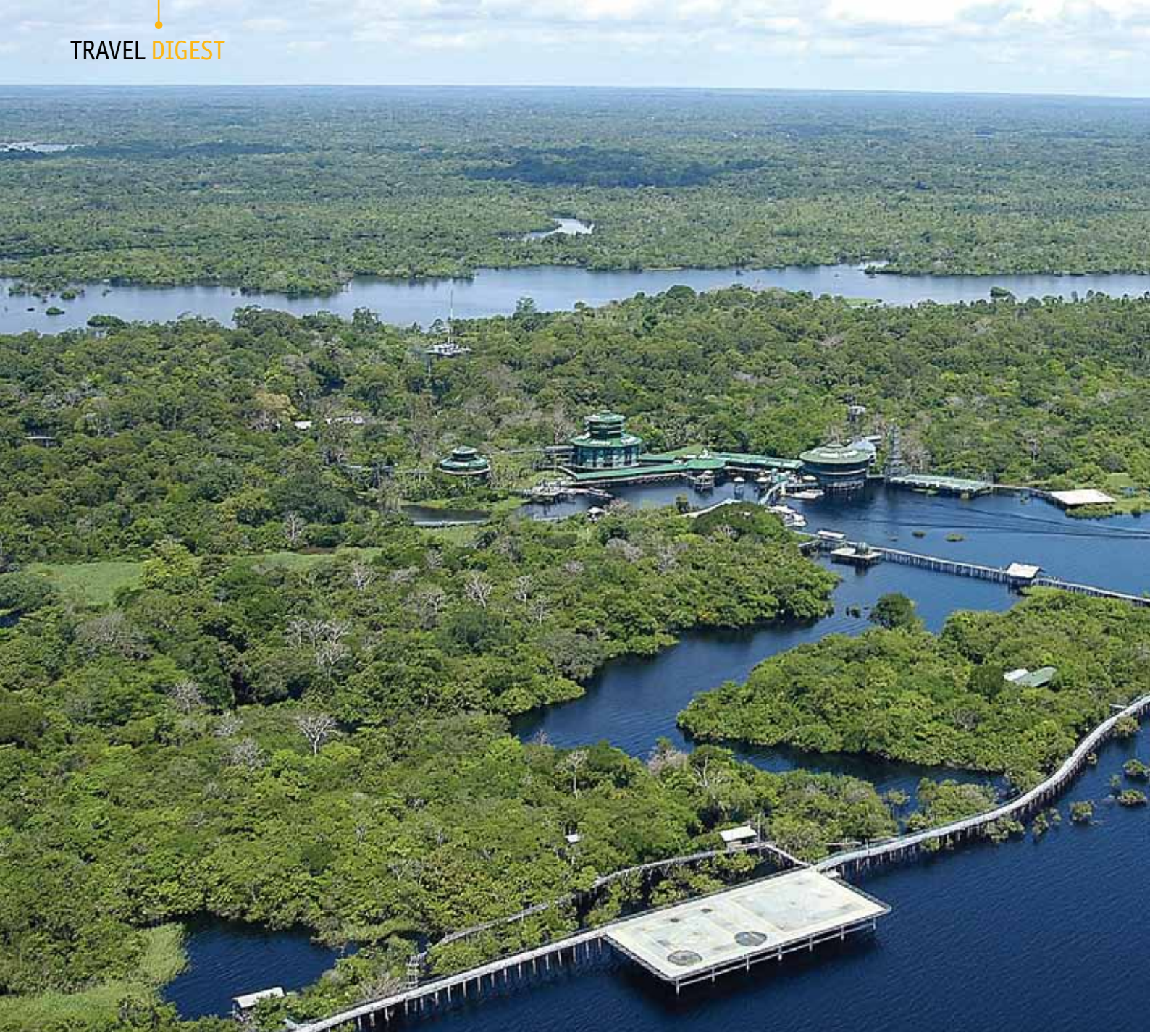


BRAZIL
ALL IN ONE

Amazonas

Top and Inset: Ariaú Towers Hotel - Ribamar o Caboclo;
Bottom: Tumucumaque River in the Amazon Region

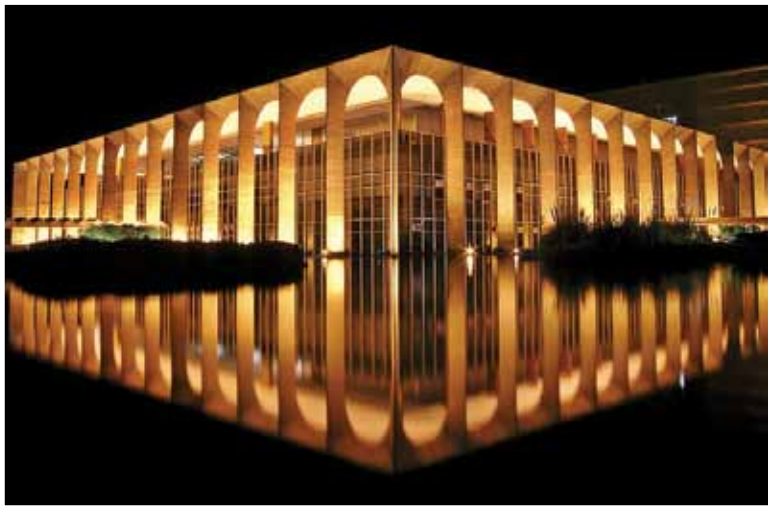
Singaporeans may conjure images of Brazilian waterfalls and beaches, but there is a lot more to explore in terra brasilis. Get off the beaten track and fly north, straight into the city of Manaus, the heart and capital of the Amazon. There, the rivers Negro and Solimões join to form the Amazon, mixing waters of two distinct colours in a spectacular sight. If you are there on business, you are either with one of Singapore's electronics companies that have set up plants in the city's reduced-tax industrial park, as done by Flextronics, or you are with the business crowd heading to FIAM, the Amazon International Fair in late November, a yearly trade-show and investment exhibition (at www.suframa.gov.br/fiam). Take a stroll downtown and check out the Teatro Amazonas, a glorious century-old theatre built by the boom and bust cycle of Brazil's rubber era.

In fact, Singaporeans and Malaysians will feel an instant connection there with past memories: the tree seeds were smuggled out by the British for attempts at rubber-plantation in Malaya; thus, rubber has bonded peoples across the oceans and the decades! Get a travel agent to put you on a leisure cruise, sailing up the river to stay at one of the river-edge jungle resorts, and see some of the forest wildlife unfolding; the fauna will drive you wild!

Flying back south, take a fresh look at Rio's many features. Right, so you, jaded travellers, have been up the granite slopes of the Sugar Loaf and Christ the Redeemer and down to the sandy and sexy world-famous Ipanema and Copacabana beaches, but there's more. Get your hotel desk to arrange tickets to watch a match in Maracanã Stadium, the world's football colosseum! Then, immerse yourself in the cool foliage of the Botanical Gardens.

Brasília

Inset: Itamaraty Palace - Sergio Viana
Bottom: Amazonas - Planalto Palace



Top: Ceará

Ride the tram over the Lapa Arches, an eighteenth-century aquaduct. The royal library, brought by the Portuguese crown to the erstwhile Brazilian capital, is a humbling experience. Did you know Brazil was a monarchy throughout the nineteenth century, which left many preserved glorious buildings downtown, and that Rio was the capital from 1763 to 1960, before the capital shifted to purpose-built Brasília in Brazil's west?

If it's February, we know why you came to Rio: for the Carnival parade - provided that your agent book your seat several months in advance! Just don't forget the rest, from seafood to night-life, passing through the National Fine Arts Museum, various galleries of arts and crafts, the confectionery shop Colombo, colonial-era forts and churches, plus handicraft workshops, business convention-centres and more. Venture away from the metropolis and chill out in the colder mountains surrounding nearby Petrópolis; go west to see the historical baronial farm-houses of the former coffee grounds along the Paraíba River; or else, head south to Parati, a charming former colonial port preserved as it was in the eighteenth century.

From Rio, it's a quick flight to the state just to the north of it, Minas Gerais - as the name says, the former gold-mining heart of Brazil and of the rich history that goes with it. Just land in the colonial town of Ouro Preto, stroll up and down its steep alleys and soak in the history of this UN-protected World Heritage Site.

Top: Iguassu Falls

The eighteenth-century gold that led to the birth of the town also led to its demise: when the gold ran out, the population left, and its architecture became frozen in time for our eyes to marvel at, more than two centuries later! One can tread its cobblestone streets and feel as if having travelled back in time to the bygone days of the coveted metal and the frenzy it caused. Nearby, the experience repeats itself in the charmingly romantic town of Tiradentes, home to old traditions and cultural and culinary festivals, houses that breathe history and its struggle for independence from Portugal, the warm kitchens and their delights, and more for the tradition-sensitive traveller. Standing in sharp contrast is the town's WiMax grid, a prototype for other

small-town broadband IT plans. As a further reminder that the state of Minas Gerais is not just about quaint man-made landmarks, it must be highlighted that nature has also left its ancient imprint in the cave complex known as Gruta de Maquiné, where stalactites and stalagmites will astonish you at every turn.

For an architectural contrast with the gold-towns, fly further into central Brazil and our capital, Brasília. Double-checking: yes, the country's capital is Brasília, surprise! Custom-built in the late 1950s in what was a savannah devoid of human settlers, the capital remains a medium-sized city, a marvel for Corbusier-minded travellers keen on bold architectural lines that feel surreal when placed against the cobbled-together feel of other Brazilian cities. The traffic grid was designed to skip the need for traffic lights.

Inset: Maquiné Cave, in Cordisburgo, Minas Gerais

The few Singaporeans who have been there were pleased to see it's a well-planned city, much like Singapore! The air is dry, so don't worry about tropical humidity. Switching back to the coast, head into Brazil's Northeast, a sun-blessed paradise. Here are the secluded beaches that European tourists have discovered and won't disclose to you; direct flights connect the old continent to these white-sand beaches not yet overwhelmed by the masses in southeastern Brazil. When you land in Fortaleza, you have a chance to get your share of Terra do Sol, Land of the Sun! Find a cool shade, savour the seafood, tapioca and a drink along that paradise coastline and watch dolphis and jangadas, fishermen's sails, pass by, especially in Mucuripe beach. If you missed Brazil's main carnival in February, fret not: while southern Brazil grows chilly in July, Fortaleza has its own off-season Fortal celebration during this month - it's your chance of catching the addictive beat of axé music. The city will also host a few matches of the 2014 Football World Cup. Last, but not least, travel to the beach of Jericoacoara - chosen by Ian Wright as the best beach worldwide! - and see the sun set into the sea, a rare sight in Brazil as most of the country's coastline faces east!

Parati

Bottom: Oleksiy Chagovets

Rio de Janeiro

Top: Colombo Café Overview

Also in the northeast is Salvador, capital of Brazil for most of its colonial era up to 1763, the capital then shifting to Rio through to 1960, then moving at last to Brasília. The colonial heyday is reflected in its downtown heritage quarter, the Pelourinho. The city bears a distinctly African feel to it, being swayed by that continent's rhythms, the capoeira martial-art-cum-dance, food ingredients, religions from Africa (often fused with Catholicism) and more. Like many Brazilian destinations, Salvador is a blend of the old and the new; for instance, the city will be in 2010 the next destination for the FDI World Dental Congress, after having been held in Singapore this year! Although there are beaches nearby, the northern and southern coasts of this large state of Bahia are testimony to the range of choices: Coconut Coast, Dendê Palm-Oil Coast, Whale Coast, Cocoa Coast, Discovery Coast (where the Portuguese first landed in 1500). If you have had your share of beaches, remember that the insland São Francisco River crosses five states and can carry you down or upriver on one of its old paddle-wheel ferries, the gaiolas.

Petropolis

Inset: Emperial Summer Palace

The hinterland also features treks into the various tabletop mountains that dot its hilly landscape, so make sure you have your mountain-bike at the ready and your swimsuit for a dip into highland ponds and waterfalls between the rocks!

Back to Rio or São Paulo for your flight connection. Then fly southwest into the queen of the waterfalls - Iguaçu! It is no wonder that the Guarani native Amerindians used to say "Y" (water) and "guassu" (big). Big water indeed, the third largest in volume worldwide! Dropping a full 70 metres, Iguaçu actually comprises 275 falls combined into this geological faultline, a borderland beauty shared with Argentina. Bill Clinton saw it and sighed, "Oh, poor Niagara Falls"! Watch the spectacle from the catwalks above, or take the power-boat into the narrow section known as Devil's Gorge, but bring a dry change of clothes in a small plastic bag, as vapour makes for 100 per cent air humidity!

Rio de Janeiro

Top: Royal Reading Cabinet; **Bottom:** Copacabana Sidewalk;
Opposite Top: New Years Eve in Copacabana Beach;
PHOTOS BANCO DE IMAGENS EMBRATUR

Bottom: Tiradentes

Also along the borderlands of western Brazil lies the Pantanal, a mega-marsh or wetland of semi-continental proportions flooded regularly by the Paraguay River, and home to a stunning diversity of avian speciments, caymans, jaguars, tapirs, capybaras, snakes and other fauna, not to mention the botanical life of these wetlands. Travel by boat through the flooded shrubs and trees and try your luck with a fishing rod; you are likely to end up feasting on succulent fish after sunset!

You won't be able to run the full course of options above, but remember: there is something in Brazil for every taste and every traveller, whether you are a sensual beach bum, a nature trekker, a culture vulture, a handicraft seeker, a business-minded executive, or the gourmand who resides in every Singaporean foodie!

Salvador

Top: Igreja da Ordem Terceira de São Francisco;
Bottom: Elevador Lacerda

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