HOW CONSUMERISM HAS INFLUENCED MY DESIGN PHILOSOPHY

Jack Harley-Walsh

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Summary of Topic:

This independent inquiry presents my design idea for a wildfire containment vehicle, formulated with a design philosophy that responds to human needs, wellbeing and the natural environment. This thesis goes on to explore my belief that design theories are being misused so that profit is placed above human need, ethics and the planet, as well as taking advantage of the current epoch of the contemporary consumer culture. I investigate different design models such as Apple and PPP (People, Planet, Profit design theories) which have inspired me to develop ideas for a more ethical design future.

Introduction

This Independent Inquiry will explore and attempt to address the issue of how consumerism is affecting design and how my personal concerns about this have influenced my design philosophy and ideas. In my opinion, design has been misused to make as much money as possible instead of using it to improve the planet and the lives of everyone in a positive way. I want to explore the reasons that are causing me to not want to be a part of the car design industry or any mass-producing design company at all.

The inspiration for this Independent Inquiry came about after I had pitched an idea to a lecturer for a previous project that had the sole purpose to contribute to saving the environment and re kindling automotive interest. His response was,

> I like it, but I don't want you to pursue it because it's my job to prepare you for industry and this idea would not be accepted in industry. You see all industry wants you to do is design the next Golf. (lecturer, 2019)

Sadly, he is right.

As I have progressed through my degree course, I have become more aware of how design is governed by profit with little concern for the environment or the value or need of the object being designed. I have felt increasing pressure to design solely for the purpose of making money. I am not the only person to feel this way; Charles Eisenstein, Guardian columnist and writer has written about business and sustainability saying: 'Considerations such as 'what do you really care about' and 'who do you serve' should be drivers of sustainability, not profit' (Eisenstein, 2014). Like him, I believe that sustainability may not always be profitable.

In chapter 1 I explore the impact of consumerism on the design industry and how ethics

should play a central role in design as social behaviour seriously affects the environment. In chapter 2 I present my own ethical vehicle design idea for my third-year major project, a wildfire containment vehicle, that I hope offers a more ethical and environmentally friendly way of designing.

This research uses both primary and secondary sources. Last year I visited Morriston Fire Station in Swansea to discuss the technical aspects of developing a fire vehicle with the fire officers. They liked the idea and gave me lots of ideas and points to consider. They also provided me with case studies about wildfires that had occurred in the UK and abroad. This research has been invaluable in helping me develop my fire vehicle idea. The secondary research is drawn from books, journal articles, websites and videos. It was difficult finding more in-depth information on the augur vehicle, referred to in Chapter 2, that is important in my design ideas. Interestingly, I also found it difficult to find material that examined consumerism and planned obsolescence in the design industry. It may be that design companies do not want to discuss such matters openly for fear of harming their sales and possible legal prosecution.

Chapter 1 - Consumerism and Ethics in Design

It is possible to design ethically and with the environment in mind. An example of good physical design is the Honda City Turbo, which came with an optional motorcycle in the back of it (see Figs. 1 and 2 below).

Figs. 1 &2 The Honda City Turbo Car and Motorcycle (Google.co.uk, 2017)

Aimed at people who work in the city, the little Honda's job was to get you to the outskirts of the city where there is less congestion and more parking to be had. It was at this point that the driver would park up for the day and remove a suitcase-sized fold out motorcycle called The Motocompo from the boot, then the driver would carry on their way to work: an ingenious idea.

This thing is such a great piece of design because it ticks all the boxes, the main one being that it solves a problem - getting people who commute through heavily congested urban areas from A to B as quickly as possible. Another is that it is fun and enjoyable to use, according to the automotive journalist YouTube channel Jason Drives (Drives, 2018). Anyone who has had the misfortune of using Arriva trains will know just how important this point is. And sure, it is no Mona Lisa but with the turbo stickers, the bulging flared wheel arches

and those aero rims are not boring to look at either.

So, in summary this vehicle represents the key points of a physical design i.e. it has a purpose, it executes its purpose in an enjoyable way, it is aesthetically interesting, and it betters humanity.

Design can be applied to absolutely anything - a microscope for a biochemist, a car (as seen above) or in the creation of a joke. It could even be an interstellar tugboat inspired spaceship designed to move moons so that we can have better weather in the UK (a thought that has just sprung to mind).

I understand that money has to be made from design in order for it to sustain a business, to fund the production of other products and to create an income to live on, but, within that, it seems important that objects are designed with a purpose other than to make as much money as possible. A classic example of using design purely to generate profit is releasing a “new product” frequently with only slight changes to the previous model. I understand this is a great way to make money (once you have an established brand name) but getting customers to pay nearly £1,000 for the latest iPhone is exploitative and serves no-one apart from Apple directors.

You may accuse me of being hypocritical as I am writing this essay on my MacBook and have recently made a call using my iPhone, but it is not. I am not annoyed at their products; I am just livid at how they use design.

Steve Jobs is both obsessive and passionate about design, insisting that computers should function perfectly and look perfect too: “It takes a lot of hard work,” Jobs said, “to make something simple, to truly understand the underlying challenges and come up with elegant solutions.” Afterall “Simplicity is the ultimate sophistication” as the lead line of Apple’s first advertising publication stated in 1977 (Isaacson, 2012).

Apple’s Jonathon I’ve believes that the ‘emphasis and value on ideas and original thinking… describes the traditions of design’ (Prigg, 2012). He continues:

> Most of our competitors are interested in doing something different or want to appear new — I think those are completely the wrong goals. A product must be genuinely better. This requires real discipline, and that’s what drives us — a sincere, genuine appetite to do something that is better. (Prigg, 2012).

He adds that ‘designing and prototyping and making’ is what sets Apple apart (Prigg, 2012). This demonstrates Apple’s design philosophy which suggests that everything must be new and sparkly. But this is basically indulging consumerism and is clearly bad for the environment. Apple believe that if they cannot design something better than its original then they will not try to do so. This desire ‘to do something better’ simply masks a business scheme to produce more products, by giving off a false sense of passion.

Many companies are aware that pro-environmental practices designed into their business model creates a positive brand association among their consumers, politicians and the regulators. This inevitably not only helps the environment but also makes good business sense. They have also found that the design innovation needed to reinvent themselves as an ethically conscious organisation has a knock-on effect on their overall creativity of designs; the companies design innovation is positively affected with employees having a

higher moral and personal investment into the company they are working for.

Companies need to make the effort to anticipate consumer trends but more importantly regulatory trends to prepare the company and put themselves in a better position for when new policies become law (Eisenstein, 2014).

The Triple Bottom Line (TBL) also known as the three P's consists of profit, people and the planet, being so named by John Elkington in 1994, who set up the British consultancy firm called Sustainability (The Economist, 2009). TBL attempts to understand the social, environmental and financial operations of a business over time and only those businesses that consider all aspects of the TBL are truly considering all the factors involved in doing business (The Economist, 2009). "Only when companies measure their social and environmental impact will we have socially and environmentally responsible organisations" (The Economist, 2009).

Eisenstein (2014) notes that it takes the business mind-set a leap to work this way because of financial self-interest, but businesses must change to end 'the opposition between profit and ecological wellbeing'. He goes on to say:

> Green taxes (shifting taxation away from sales and income onto pollution and resource extraction) and laws against ecocide promote the alignment of ecology and money, but we will never be able to rely wholly on self-interest as a way to enact love. There will always be a next step that doesn't make sense by the numbers. (Eisenstein, 2014)

New research in the UK about ethical living undertaken by YouGov showed that behaviour change is possible and that the public's desire to be environmentally friendly and invest their money in ethical products and causes has not been deterred by the depressed

economy. According to Confino and Muminova (2011) 'Virtually all those over 16 years old undertake at least one environmental or ethical action regularly.' (Confino and Muminova, 2011).

However, the research also found that:

> Only 47% of UK adults believe that individual efforts to limit their own impact on climate change are worthwhile, although this rises to 70% of readers and users of the Guardian and Observer, who tend to be more eco-conscious.
> (Confino and Muminova, 2011).

When The Guardian News and Media surveyed 1000 readers and online users and part of their findings were that consumers were not willing to pay more for environmentally friendly and ethical goods and services.

To understand what was causing these conflicting figures, The Guardian News and Media attempted to categorise the responses of those undertaking the survey as follows:

The first category of people are those that are 'committed' at 41% of responses. These people are very aware and have an urgent sense of the need to be environmentally friendly and ethical and do everything they can to achieve this.

The next category, 'followers' 23% feel some need to change how they live but are not prepared to take drastic measures.

The 'confused' group at 23% reported not being sure what difference their actions might make and felt government and business should take responsibility.

The last group, 'questioners' at 13% feel there is little point in individual action and are mostly interested in action that relates directly to them and their community.

This categorisation can help ethical and sustainable businesses to market their products. This information provides valuable insight for all types of design and manufacturing

businesses including the car industry. As Confino and Muminova (2011) note:

> For a car manufacturer seeking to promote greener vehicles, for example, concerns over the environment will be the primary reason for the Committed and Followers, while of the most significant interest to the Confused and Questioners will be fuel savings. (Confino and Muminova, 2011).

Many companies today have become more design focused, with a great deal of research and innovation moving away from an engineering-driven perspective towards a design-focused philosophy. This is also reflected in a tendency towards less product focused design and a greater tendency towards customer orientated design and similarly a move away from marketing led to user-experience led approaches. (Clark et al, 1994). According to Naiman (2019) 'A design mindset is not problem-focused, it's solution-focused and action-oriented. It involves both analysis and imagination.'

A design-oriented approach is about problem solving. It is concerned with making something, or making a problem go away. The emphasis is on improving the future; it builds ideas up and into being, whereas critical thinking is perhaps more about breaking something down. All design is based around humans and a designer must have a deep and complex understanding of their users or customers to be able to meet their needs, especially those needs that have not yet been met. My purpose of design is to improve on the quality of people's lives and, just as importantly, the planet.

However, the problem solving-oriented design approach is strangled by this kind of self-centred profit hungry business mindset. 'Responding to environmental problems has always been a no-win proposition for managers' report Noah Walley and Bradley

Whitehead in 'It's Not Easy Being Green' (Walley and Whitehead, 1994). They present the choice as being either to damage your business whilst trying to help the environment or look after the earth whilst permanently ruining your business. (Walley and Whitehead, 1994). In other words, if you want to build an ethical business, your business you will automatically become financially vulnerable.

But things can change, and things have been changing. Clark et al have a more optimistic view that it is possible to be both green and build a successful business,

> In this new world, both business and the environment can win. Being green is no longer a cost of doing business; it is a catalyst for innovation, new market opportunity, and wealth creation (Clarke et al, 1994).

The general view is that the governing environmental regulators are implementing large costs for industry, and as a result are slowing down productivity and company growth. There is concern that companies will lose their competitiveness and their international markets as a result. But such worries may be misplaced as there is little evidence that such environmental regulations have harmed industry in this way (Clark et al, 1994).

According to Pauline Madge (2014, p. 45), in critiquing design at issue 'is a new view of the world and a choice of possible futures.' She discusses two key, and quite different, ways of understanding how we deal with environmental concerns in design. One has been called 'technocentric', the other 'ecocentric'. (Madge, 2014, p. 46).

The technocentric view means placing faith in science and technology 'to manage the environment for the benefit of present and future generations.' The ecocentric view, in

contrast, involves ‘a deep reverence for nature. It is in favour of low impact technology and it is concerned with the environmental impact of rampant economic growth and large-scale industrial development.’ (Madge, p. 46).

Personally, I think ecocentric is the way to go as I believe it is possible to live with less. Just consider Cuba for example, where many people still use cars which are seventy years old. I understand that the Cuban people are forced to do this because of the Cuban missile crisis which caused a trade ban, but this shows that it is possible. The technocentric approach, in contrast, involves the many putting their faith in the few to solve the world’s problems. An example of this would be Ford Focus owners scrapping their Ford Focus for a new one that has an eco-boost engine. On paper this sounds like a good idea, but the new eco-boost engine (as efficient as it may be) is undermined by the material wastage and the pollutive processes used to recycle the older car.

The instant advantages of car recycling include the salvage and recycling of steel from the car frames, appropriate and safe disposal of oil and fuel, and the decreased emission of greenhouse gasses released during the manufacturing of steel. Junked vehicles can pollute and cause environmental contamination from the fluids, oil, petrol, anti- freeze and even mercury that seeps into the soil (Aadvark, 2015).

Manufacturing steel for cars is achieved through refining iron ore using coal, a process that is highly harmful to the environment. Recycling steel on the other hand is much more energy efficient, using 74% less energy than making a car from new steel. (Aardvark, 2015)

Design must incorporate sustainability, the outcome must be sustained indefinitely, it needs to generate outcomes without depleting or destroying resources.

This graphic (Fig.3 below) taken from Christian Knutson's paper (2016) exemplifies the interplay of different factors to achieve sustainability into a design. The factors to take into consideration in the design are economic prosperity, environmental protection and social equity. Each dimension should not compromise the others. The graphic shows how the environment, business and social aspects all impact on one another; it is not possible to deal with one aspect without affecting the other.

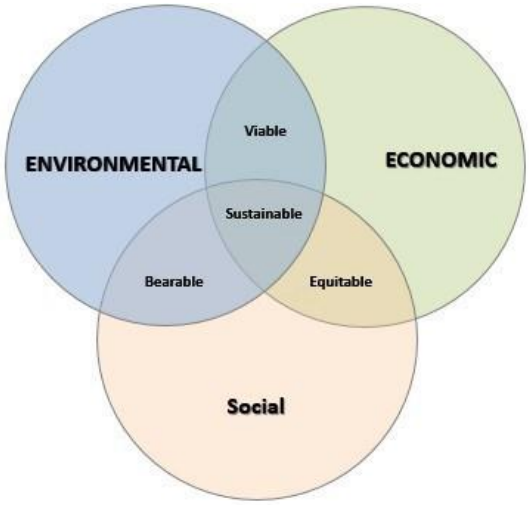

Fig. 3 Environmental, Economic and Social Interactions Diagram (Christian Knutson, 2016)

Another of Christian Knutson's illustrations (Fig. 4) talks about the triple bottom line. He states that to make a project viable the design needs to find an optimum between the three parts of social equity, environmental protection and economic prosperity. Organizations should be looking at projects as 'People, Planet and Profit' (Knutson, 2016).

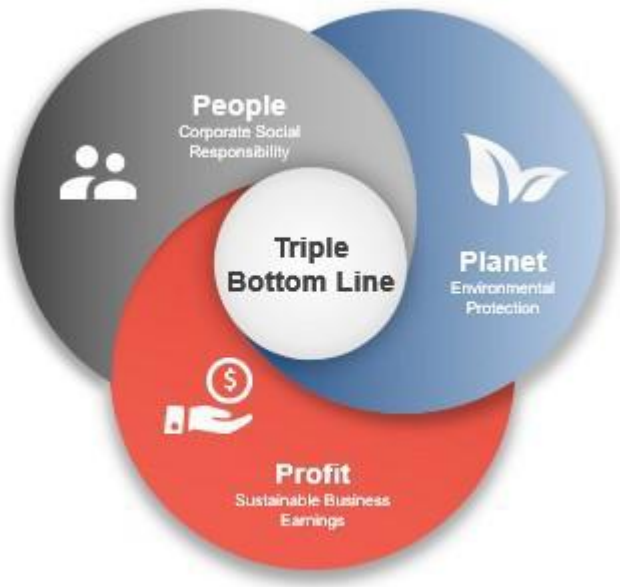

Fig. 4 People, Planet and Profit Diagram (Christian Knutson, 2016)

Social aspects are at the base of the problem in my opinion. Advertising aims to get people to buy more products with a negative impact on the environment. To deal with this, businesses and design companies have to be creative, and actually design something new and better that is genuinely beneficial for the environment in the long term, beyond just having the environment in mind as a secondary concern. This includes making things that are built to last. Otherwise it is all about getting people to buy more for the sake of it, in other words consumerism.

Dieter Rams (2017) has produced a highly useful guide for good design which is worth listing in full. Rams states that good design:

‘1. Is innovative
2. Makes a product useful,
3. Is aesthetic,
4. Makes a product understandable,
5. Is unobtrusive,
6. Is honest,

7. Is long-lasting,
8. Is thorough down to the last detail,
9. Is environmentally friendly,
10. Involves as little design as possible'.

In 1988 John Elkington and Julia Hailes published the bestselling 'Green Consumer Guide' explaining Green consumerism. These guidelines came up against scrutiny from Friends of the Earth, who while supporting a culture of green consumerism highlighted the fact that there was what they coined as a 'green con' and 'argued the need to go Beyond Green consumerism' (Madge, 1997).

Variants of the term green that are used to illustrate that an item or service is environmentally friendly may come under the 'Green Con'. It is argued that they encourage misleading advertising claims. (Carlson et al., 1993) analysed the believability of green advertising claims and found that only 40% of their sample were unambiguously true, 42% were vague and 18% were either total lies or errors of omission (Kitchen, 2002). The Advertising Standards Authority were concerned with the use of green claims in the UK car and fuel industry. They organised a seminar in 1993 to address the do's and don'ts of motoring advertising. Significantly, it is the ambiguity, lying and omissions which are giving so called green advertising a bad name (Kitchen, 2002).

Conflict in the idea of green consumerism arises when you address the concern that companies are still needlessly producing goods and services. Added to this are some that are unnecessary or substitute another object, and others that have limited durability, and lifespan.

A conference was held by The Design Research Society in 1992 entitled 'The Greening of

Design' with a view to explore the impact of product and business development on the environment from the perspective of design management. (Madge, 1997). The New Economics Foundation could see that there was a big hill to climb if businesses could be persuaded to bring environmental ethics and business awareness into their sectors. It is a a case of if the customers want it, they are more than happy to provide it, as meeting the need for demand is their ethos.

> The vital issues of the coming decades will revolve around the nature of global consumption and distribution. Fundamental choices will have to be made about lifestyles, patterns of production and consumer priorities. Planet sustaining decisions must be based on extensive and wide-ranging information about the nature of our consumer society and those who service it (Madge, 1997).

The redesign of design itself is perhaps the way forward. It has been argued by designers critical of current design theory and practice that our industrial society can be helped to undergo a complete change of values through the process of eco-design, but only if design practice itself is radically rethought. (Madge, 1997, p. 54).

Driven by the leading guidelines and influence of The Design Research Society a new term in design arrived, 'eco-design' a new design paradigm to incorporate an environmental criterion to the design process. Eco-design can potentially reform all design, 'it can establish a new foundation for design that could bring economic and ecological needs into a new union' (Madge, 1997).

The continued interest and development of eco-design has enabled it as a process to evolve into a system that is incorporating every aspect of design from 'womb to tomb' (Madge, 1997). Eco-design can be applied to design at all levels, from individual products to systems

to whole industries. Life cycle models can carefully monitor energy use and raw material use from the initial creation to the final obsolete product.

> Thinking about the life cycle of products through time, and considerations about design for recycling, have led to the concept of DfD - Design for Disassembly- followed by the idea of going Beyond Recycling towards the design of long life, durable products (Madge, 1997).

This chapter has attempted to argue that design has been misused for the gain of profit. Major companies have realised that they can portray themselves as having green credentials and use this as a marketing tool to sell more products, which ultimately defeats the point. The alternative is to sell fewer truly innovative products that could make a difference in the long-term if given enough backing, marketed correctly and with enough confidence, such as the Honda City Turbo, so there is no stigma attached to owning a product that is old or simple.

We need to radically rethink how we design and live. As Madge (1997, p. 53) concludes: ‘The answer is a shift from the "cultivation of needs" to "a culture of permanence": This obviously implies a new agenda for design.’ (Madge,1997, p. 53).

Chapter 2 – Ethical Fire Vehicle Design

Chapter 1 has outlined the need for ethical design principles if we are to deal with the environmental crises that threaten us. With these concerns in mind I have decided to put my effort into designing a more ethical and environmentally friendly vehicle for my third-year Major Project. The idea I have conceived is to design a wildfire containment vehicle.

My aim is to design a vehicle to aid fire services around the globe in the fight against wildfire and grass fires. I would like the vehicle to be able to contain these fires so that they cannot spread further and destroy more natural habitats and people's property. The idea is that the vehicle would be able to replace the firefighters in certain dangerous roles so that not only are they safer, but it is also less labour intensive for them, and it means more firefighters can put their energy and resources towards other important roles of their job. I want my vehicle to be autonomous or remotely operated, again to keep firefighters out of harm's way. Without a human operating it on board, it also means there is more equipment storage and room for technology in the vehicle and the vehicle's overall size can be smaller so that it is possible to get to the site of the fire easier. I like the idea of my vehicle being propelled by augurs, like the vehicle in Fig.5 (below). By incorporating them into the design not only can they propel the vehicle over rough terrain but they can also be used to create firebreaks, essentially a trench which has been dug into the ground that can prevent the spread of fire as illustrated in Fig. 6 below.

Fig.5: Cosmonauts' Blue Bird (Christian and Abrams, n.d.)

Fig.6: Photograph showing firebreak (George Herald, 2013)

If I do decide to go ahead and install the auger technology, I would like it to not only propel the vehicle and create firebreaks but to be able to scoop up earth which could then be projected onto the fire to suffocate the flames. This could work rather like a combine harvester when it is harvesting wheat: the cylindrical barrel at the front of the harvester scoops up the wheat and then channels it to the inner workings of the harvester where it is chopped, shaken and expelled into the trailer of an accompanying tractor. The difference between my design and a combine harvester, however, is that the augurs will proportionally be the equivalent of the standard sized cheese-grater, with slits which will scoop the earth into the spinning augurs, this process naturally breaking up any larger chunks of earth. The earth will then be directed from the augurs to the earth canon on top of the vehicle which will eject the earth at a constant flow towards the fire. In summary the augers of the vehicle will do three jobs: they will propel the vehicle, create fire breaks and generate an environmentally friendly fire extinguishing agent (soil).

I was fortunate enough to go to Canada last summer on a road trip to the Rockies. It was here where the idea for a fire fighting vehicle became solidified in my mind as I had first-

hand experience of seeing how close the fires can get to urban areas; seeing the black chard hillsides where forestry used to be is disconcerting. I also saw houses being rebuilt as a result of previous ones being destroyed by these fires.

We are not immune to the problem either, here in Wales they're happening more and more frequently. There was one on the hillside just outside Swansea earlier this year and there has been an increase in grassfires in Wales in recent years. During the period of 2017 and 2018, the Welsh Fire and Rescue Authorities responded to 2090 rural fires, this is an increase of 22% in relation to the year before (Welsh Government, 2018).

Of all the fires that happened in Wales during 2017 and 2018, 52% of those happened in South Wales, 31% happened in Mid and West Wales, and the final 17% happened in the North of Wales (Welsh Government, 2018). There are various theories regarding the reason for these fires occurring. The most significant factor is likely to be human activity:

> [A]n example of this would be a person dropping a lit cigarette/leaving a camp fire unattended whilst out in dry areas of vegetation; Fires are also caused by youths intently starting fires. In some cases, fires have been started intentionally - 78 of 112 reported blazes in Merseyside are suspected to have been started deliberately' (Hausfather, 2018).

Climate change is may not yet be the most frequent cause of wildfires, but this could change in the future as it causes 'the dry conditions perfect for these fires to spread and amount to the size that they do with a frequent occurrence.' (Hausfather, 2018).

After conducting some primary research at the Morriston Fire and Rescue Service of south Wales I found out that grass fire breakouts are causing a strain and shortage of their resources. The fire staff said that the best way to prevent, and slow, fires is by clearing the

most combustible vegetation and using our surroundings, like rivers, roads, tracks, as best as we can to help contain fires as well as making manmade fire breaks. A manmade break can be linked to an existing natural break.

A big impact is climate change as there is more growth of vegetation due to warmer winters. Thanks to this during the spring and summer there is more fuel to burn. And it is only going to become worse if this weather pattern is to continue.

This summer the fire was burning down into the soil. This was a problem, as however much water is put on the fire it will still dry out and the remaining tufts can reignite. Unless they are dug out tufts always remain. Currently this essential job is just down to shovels and human power.

In all places where wildfires happen fire fighters must dig the trenches manually or in some cases, they use machines such as excavators which are used to aid in the construction of the brakes; however, they are expensive to run and not incredibly fast. Another manual labour-intensive job that the fire fighters must do is beating. This is where a group of fire fighters are sent out to a fire of a manageable size with the task of extinguishing the fire before it gets out of control with what is essentially a rubber mat on a stick as you can see in Fig7 (below). This is extremely primitive. The current hand tool equipment used to combat fires incudes: rubber beaters, leaf blowers, shovels and Knapsack sprayers which are water filled back packs with a sprayer.

Helicopters are used only if fire is near to forestry, or when life is at risk. However, helicopters are incredibly expensive to operate. Why not make a machine that can put out or contain or slow the spread of fire? When beating out the fires, fire fighters are putting

themselves in a position where they could get surrounded by the flames and become trapped.

Fig.7: **Firefighters using firebeaters** (Binding, 2018)

This has happened to people in California, luckily a man managed to save them by driving his Toyota Tundra pick-up truck directly through the flames to get people out to safety. But his vehicles exterior had melted due to the immense heat. Figs 8 and 9.

Fig.8 Image of Toyota Tundra which was driven through a wildfire (Chin, 2019)

Fig.9 Image of Toyota Tundra showing how it melted in wildfire (Chin, 2019)

Fig.10 Image of Thunderbird 2 deploying Thunderbird 4 (Tomy, n.d.)

This led me to think that my vehicle design could incorporate interchangeable capsules with capsules containing equipment for different tasks, like the Thunder Birds 2 and 4 in Fig. 10. This could work rather like airbus's autonomous drone concept in Fig. 11 that could transport the firefighting Capsule's to and from the vehicle.

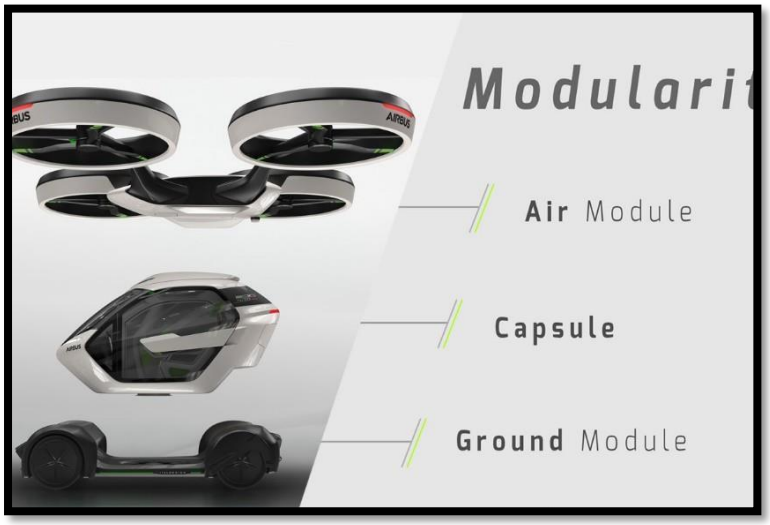

Fig. 11 **The Airbus city transport concept** (Google.com, 2019)

One capsule could contain a rover which would detach from the main vehicle, and like the Californian Toyota hero can enter the fiery danger zones only without damage to the vehicle or potentially the driver as my rover will be autonomous and designed to cope with the temperature. The main reason for the autonomy is there's less people put in harm's way so less risk to life.

In this chapter, the global problem of wildfires threatening urban environments and destroying natural habitats has been discussed. Research has been presented showing that the most effective way of slowing down or containing a fire is using a fire break. I have explained how I could create vehicle that could create firebreaks and how previous design concepts have inspired the design of my product. In relation to the research conducted in

chapter 1, chapter 2 has presented a design which is beneficial to humankind and the environment and shows how design can have a purpose other than profit.

Conclusion

In conclusion, it was a conversation with my lecturer that inspired this discussion about desirability and profitability being more important than the performance, purpose and ethics of a product. By constantly upgrading or varying a design of the same product to make it more desirable rather than more beneficial, we are destroying the environment. This is because instead of repairing or repurposing a piece of equipment we dispose of it and make or buy a new one that incorporates a catchy marketing modification that feeds the consumer appetite, causing constant pollution as the older products are disposed of.

Whilst I have frequently expressed my angst and disappointment at the economic sector who constantly present the next best products and advertise them in a way that makes the consumer feel that they must have them, I also acknowledge that advertising and marketing are not entirely responsible for this consumer culture of 'must have' products. This culture has also been perpetuated by social media and the constant bombardment of personalised advertising and lifestyle product placement online, leading to the constant feeding of desire for certain products within those who would like to emulate a certain lifestyle. Socially we are not strong enough to restrain ourselves from buying branded products. Any change has to be driven from the side of economic business with a move towards permanence and durability of design rather than planned obsolescence and marketing of the same product with only small changes. This requires a change in attitude about how we value ourselves and other people, focusing more on personal qualities and self-achievement rather than what we can buy and possess.

Is there a way to break that cycle of demand and supply? The research I looked at was perhaps more pessimistic about the possibility of this change than I am. Some of the research was a couple of decades old, such as Madge's paper of the late 1990s, but the debates do not seem to have changed radically. What good is being done through recycling and using sustainable materials is now being hijacked by companies who want to be seen as green, in order to increase their customer base. Being 'eco' can now be a marketing tool to sell more products.

In order to stem this flow business models would need to overhaul their supply chain and introduce a more ethical and sustainable way of communicating to the consumer. We are substituting what needs to be done over what we want to be done.

This independent enquiry has potentially inspired me to one day create a design firm of my own where money is not the focus, but the betterment of humanity and the planet takes first priority.
A company where the goals are to design something that is purposeful, where the key principals of design are used as laid out by Dieter Rams, focusing on designing products that solve need, not feed the greed. I would enjoy further exploring the viability of the Wildfire containment vehicle (which I would name ZAFFOX for personal reasons) the purpose of this design being to protect the environment of mankind which ties in nicely with my design philosophy.

Design should no longer be a standalone degree, not if it carries on being taught and executed the way industry wants it to be; if it is directed purely by profit then it should just be another aspect of a business course. Good design is there to solve a problem. In essence, the priority of design

should be to better people’s lives in a sustainable way, no matter what the design may be.

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Image index

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