

Design 2019 v1.1

IA2 high-level annotated sample response

July 2018

Project (35%)

This sample has been compiled by the QCAA to assist and support teachers to match evidence in student responses to the characteristics described in the instrument-specific marking guide (ISMG).

Assessment objectives

This assessment instrument is used to determine student achievement in the following objectives:

1. describe the features that define a HCD problem and design criteria based on stakeholders' requirements and principles of good design
2. represent ideas, a design concept and HCD information using ideation sketching, schematic sketching and low-fidelity prototyping in the explore and develop phases
3. analyse needs and wants using primary data about stakeholders and secondary data about existing designs and HCD information
4. devise ideas using divergent thinking strategies in response to the HCD problem in the develop phase
5. synthesise ideas and HCD information to propose a HCD concept in the develop phase
6. evaluate the strengths, limitations and implications of ideas and a HCD concept against design criteria to make refinements
7. make decisions about and use visual, written and spoken communication to present a design brief and design proposal for stakeholders.

Instrument-specific marking guide (ISMG)

Criterion: Exploring

Assessment objectives

1. describe the features that define a HCD problem and design criteria based on stakeholders' requirements and principles of good design
3. analyse needs and wants using primary data about stakeholders and secondary data about existing designs and HCD information

The student work has the following characteristics:	Marks
<ul style="list-style-type: none">• discerning description of the features that define a HCD problem and essential design criteria based on stakeholders' requirements and principles of good design• insightful analysis of needs and wants using relevant primary data about stakeholders and secondary data about existing designs and HCD information to identify the significant features, constraints and the relationships between them.	9–10
<ul style="list-style-type: none">• effective description of the features that define a HCD problem and design criteria based on stakeholders' requirements and principles of good design• considered analysis of needs and wants using relevant primary data about stakeholders and secondary data about existing designs and HCD information to identify valid features, constraints and the relationships between them.	7–8
<ul style="list-style-type: none">• adequate description of the features that define a HCD problem and some design criteria based on stakeholders' requirements and principles of good design• appropriate analysis of needs and wants using primary data about stakeholders and secondary data about existing designs and HCD information to identify some features, constraints and the relationships between them.	5–6
<ul style="list-style-type: none">• superficial description of a HCD problem and some design criteria• superficial analysis of needs and wants using HCD information to identify partial features.	3–4
<ul style="list-style-type: none">• description of aspects of a HCD problem• statements about needs and/or wants.	1–2
<ul style="list-style-type: none">• does not satisfy any of the descriptors above.	0

Criterion: Devising

Assessment objectives

4. devise ideas using divergent thinking strategies in response to the HCD problem in the develop phase

The student work has the following characteristics:	Marks
<ul style="list-style-type: none">multiple ideas perceptively devised from different points of view — with each idea incorporating unique, credible and detailed attributes — using divergent thinking strategies in response to the HCD problem in the develop phase.	6–7
<ul style="list-style-type: none">ideas purposefully devised — with each idea incorporating unique, credible and detailed attributes — using a divergent thinking strategy in response to the HCD problem in the develop phase.	4–5
<ul style="list-style-type: none">ideas appropriately devised — with each idea incorporating credible attributes in response to the HCD problem in the develop phase.	2–3
<ul style="list-style-type: none">ideas disjointedly devised in response to aspects of the HCD problem.	1
<ul style="list-style-type: none">does not satisfy any of the descriptors above.	0

Criterion: Synthesising and evaluating

Assessment objectives

5. synthesise ideas and HCD information to propose a HCD concept in the develop phase
6. evaluate the strengths, limitations and implications of ideas and HCD concept against design criteria and make refinements

The student work has the following characteristics:	Marks
<ul style="list-style-type: none">coherent and logical synthesis by combining attributes of multiple ideas and HCD information to propose an innovative HCD concept in the develop phasecritical evaluation of the strengths, limitations and implications of ideas and a HCD concept against design criteria to make discerning refinements.	9–10
<ul style="list-style-type: none">logical synthesis by combining ideas and HCD information to propose a credible HCD concept in the develop phasereasoned evaluation of the strengths, limitations and implications of ideas and the HCD concept against design criteria to make effective refinements.	7–8
<ul style="list-style-type: none">simple synthesis by combining ideas and HCD information to propose a HCD conceptfeasible evaluation of the strengths and limitations of ideas and the HCD concept against some design criteria to make adequate refinements.	5–6
<ul style="list-style-type: none">rudimentary synthesis of ideas to propose a partial HCD conceptsuperficial evaluation of ideas or the HCD concept against some design criteria.	3–4
<ul style="list-style-type: none">unclear combination of ideasmake statements about ideas or the HCD concept.	1–2
<ul style="list-style-type: none">does not satisfy any of the descriptors above.	0

Criterion: Representing and communicating

Assessment objectives

2. represent ideas, a design concept and HCD information using ideation sketching, schematic sketching and low-fidelity prototyping in the explore and develop phases
7. make decisions about and use visual, written and spoken communication to present a design brief and design proposal for stakeholders

The student work has the following characteristics:	Marks
<ul style="list-style-type: none"> • sophisticated representation of ideas, a design concept and HCD information using fluent sequences of ideation sketching, schematic sketching and low-fidelity prototyping to progress understanding in the explore and develop phases • discerning decision-making about, and fluent use of, <ul style="list-style-type: none"> – spoken features, design-specific vocabulary and visual elements and principles to present a design proposal for a live or virtual stakeholder audience – written conventions, features and design-specific language to present a design brief for stakeholders. 	7–8
<ul style="list-style-type: none"> • considered representation of ideas, a design concept and HCD information using proficient ideation sketching, schematic sketching and low-fidelity prototyping to progress understanding in the explore and develop phases • effective decision-making about, and proficient use of, <ul style="list-style-type: none"> – spoken features, design-specific vocabulary and visual elements and principles to present a design proposal for a live or virtual stakeholder audience – written conventions, features and design-specific language to present a design brief for stakeholders. 	5–6
<ul style="list-style-type: none"> • appropriate representation of ideas, a design concept and HCD information using ideation sketching, schematic sketching and low-fidelity prototyping in the explore and develop phases • appropriate decision-making about, and use of, <ul style="list-style-type: none"> – spoken features and visual elements and principles to present a design proposal – written features to present a design brief. 	3–4
<ul style="list-style-type: none"> • cursory representation of ideas and information using unclear sketching or low-fidelity prototyping in the design process • variable decision-making, and inconsistent use of, <ul style="list-style-type: none"> – spoken features or visual elements – written conventions. 	1–2
<ul style="list-style-type: none"> • does not satisfy any of the descriptors above. 	0

Task

Respond to the following question: How can the design of products, services and environments make the experience of ageing more attractive?

Use designing with empathy as an approach to understand and experience the needs and wants of older people. This will require you to:

- identify stakeholder/s who must be an older person or group of older people (aged over 60)
- apply the HCD process to respond to their needs and wants using design with empathy techniques.

Interacting with your identified stakeholder/s throughout the process will be important.

Sample response

Criterion	Marks allocated	Result
Exploring Assessment objectives 1 and 3	10	10
Devising Assessment objective 4	7	7
Synthesising and evaluating Assessment objectives 5 and 6	10	10
Representing and communicating Assessment objectives 2 and 7	8	8
Total	35	35

Part A

HCD PROJECT

Design with empathy

Principles of good design

- innovative
- useful
- aesthetic
- accessible
- enduring
- sustainable

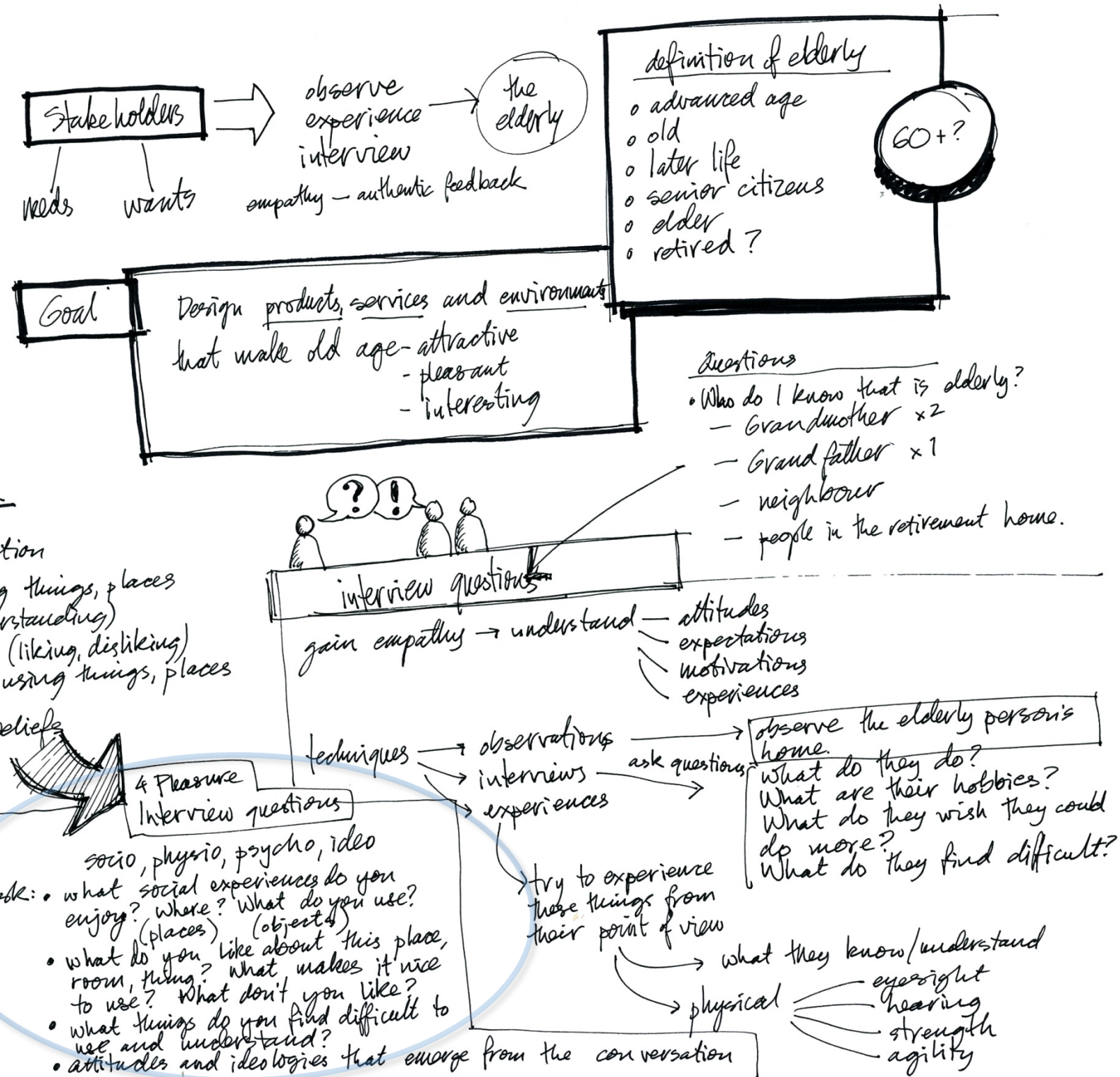
Dieter Rams
10 principles?

- economic
- social
- cultural
- aesthetic
- technical

Notes on the 4 Pleasure framework

- socio-pleasure — social interaction
- physio-pleasure — the feel of using things, places
- psycho-pleasure — cognitive (understanding) and emotional (liking, disliking) experience of using things, places
- ideo-pleasure — values and beliefs

- Other questions
- What do you look forward to?
 - How would you like to improve your circumstances?
 - What do you like about this stage of life?



Exploring [9–10]

insightful analysis of needs and wants using relevant primary data about stakeholders and secondary data about existing designs and HCD information to identify the significant features, constraints and the relationships between them

My Grandparents' House

Occasional Table

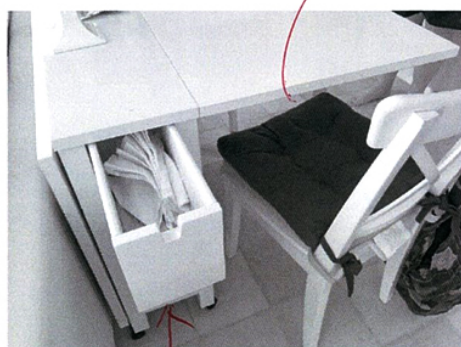


From Ikea.

occasional table folded up



opened for 2 (Gran and Pop) but can open out for 6 if necessary (but not much room for that)



padded chair

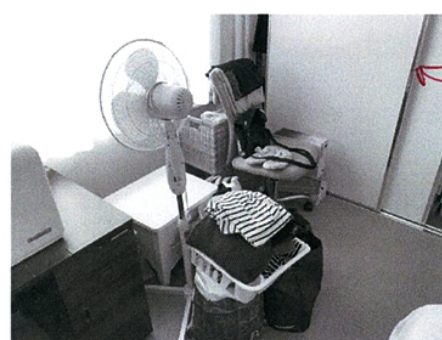
useful storage drawers

Spare bedroom

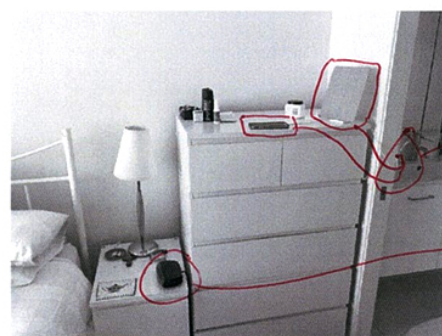


sewing machine

clothes to be donated



wardrobe full of clothes



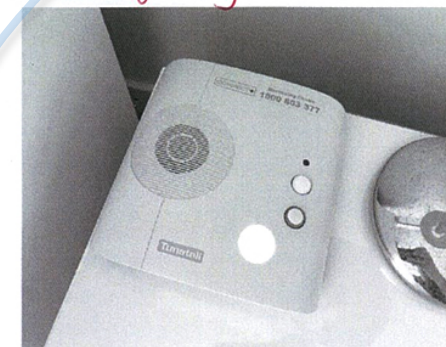
iPad) charging
iPhone)

power from ensuite

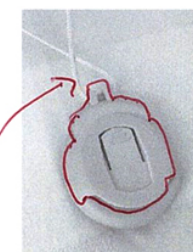
clock radio instead of smartphone



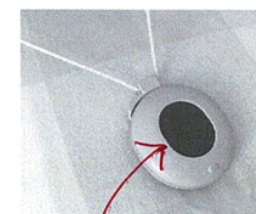
Emergency Alarm



Alert button next to bed



lanyard holder can be unclipped



alarm button

Alarm pendant - may be worn or hung in a good place

Exploring [9-10]

insightful analysis of needs and wants using relevant primary data about stakeholders and secondary data about existing designs and HCD information to identify the significant features, constraints and the relationships between them

Stakeholder Interview

Interview with Allen & Lilly (grandparents)

Location: home, high set weatherboard house
7 km from Brisbane 2 people/residents
large yard - chooks!
1 car, nearby bus service (prefer car)

Looking forward to:

- school holiday visit of daughter (teacher)
- visit of Lilly's brother (uncle) - he likes doing handy man things around the house
- stay in the spare room/visitors room
- bowls during the week
- gardening → harvesting veggies → planting for spring
- State-of-Origin - need to fix TV antenna - got a new big TV!

What do you like about life?

- Time! Time to see friends, work in the garden, family
- Choice. We could travel if we wished to
- Grand children - spoiling them, watching them grow up

Ideas • guest room interior - storage and also attractive accommodation

- easy-to-use TV & remote control
- digital security?
- video chat - long distance socialisation
- home security - feel safe but not locked in
- gardening tools, apron?

Ideas that help people like Allen & Lilly not necessarily just for Allen & Lilly.

not my client

Observations

Home - 3 bedrooms

- master bedroom - 2 beds
- visitors room
- utility room - sewing machine, bed, clothes boxes

Living room

- old, small TV
- DVD player

Kitchen

- CD player/radio
- new fridge
- modern electric stove
- kitchen table
- no dishwasher
- no microwave

- router WiFi

Verandah - enclosed sitting room
small - a little musty, warm, home theft
worried about security

Observation:
safety is really important - influences much behaviour

Contact & communication → social is important to them

Lilly's smart phone
Samsung Galaxy

→ mainly phone - land line cordless phone
"Words With Friends" game used for social messaging.
Prefers to talk on the phone rather than text. → like Scrabble. keeps the mind sharp.

socio- and psycho-pleasure

"why do they have to be 'smart'?"
just wants a simple TV.

How would you like to improve your life, circumstances?

- New TV
- Improve home security - not feeling locked in but safer
- Sort out the third bedroom - tidy up, store stuff elsewhere → be able to have more guests
- Better contact with distant friends and relatives → widen social experience
- Digital security - worried about scams, hacking

Empathy

Exploring [9-10]

insightful analysis of needs and wants using relevant primary data about stakeholders and secondary data about existing designs and HCD information to identify the significant features, constraints and the relationships between them

Exploring [9-10]

discerning description of the features that define a HCD problem and essential design criteria based on stakeholders' requirements and principles of good design

Project Ideas

Which of these ideas will lead to a product, service or experience environment that will help make old age attractive, pleasant and interesting?

Guest room interior

storage system to tidy up room (allow use as a guest room) → bed with storage underneath
bed - double or single?
storage
cupboards
clothes boxes
desk
writing machine
sewing machine

Easy TV & remote control

Large flat screen TV with simplified remote control — plus DVD player?

huge TV
easy remote
power
volume
channel
power
play
pause
next
previous
menu
TV remote
DVD remote

Home security

Alarm system
cctv monitoring
Door lock/video monitor of callers.
video screen showing outside
lock/intercom
front door
medical alert button
security - lets you access the house without setting off alarm
Personal alarm (carry around home)

Social communication

long distance - chat (voice)
chat (video)
smartphone
TV?
huge TV
web cam built-in
video chat
simple remote
on-screen address book

Gardening

gardening apron or smock
planting
weeding

- attractive to elderly people
- not too attractive enough to be seen wearing by visitors, neighbours

patterns
colours
features
male version
masculine style
female version
feminine style

Social kitchen

the ideal kitchen for cooking and entertaining family and friends

cooking
recipe books
shopping list
sink
fridge
stove
oven
pantry
bin
dishwasher

eating
table
chairs
family photos

how many people?

decor?
style?

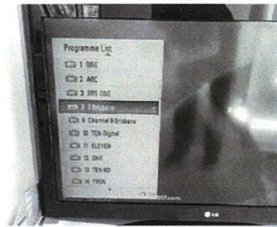
Feedback sheet: STAKEHOLDERS, ALLEN AND LILLY.

Project Ideas	Which of these project ideas would you like me to develop?
	Please place a tick along the line that best describes your need or want
GUEST ROOM INTERIOR	Immediate need.....would be nice one day ✓
TV AND REMOTE	Immediate need.....would be nice one day ✓
HOME SECURITY	Immediate need.....would be nice one day ✓
SOCIAL COMMUNICATION	Immediate need.....would be nice one day ✓
GARDENING	Immediate need.....would be nice one day ✓
SOCIAL KITCHEN	Immediate need.....would be nice one day ✓

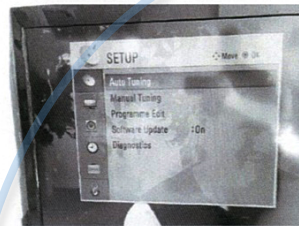
TV INTERFACE



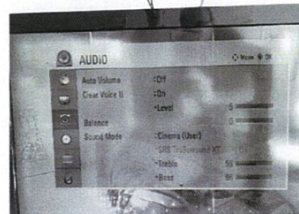
LG TV
top level menu



channel list



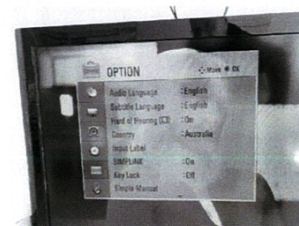
Setup Menu
- hardly ever used
- maybe elderly people don't need this?



Audio Menu
- most people never touch this after setting up a new TV

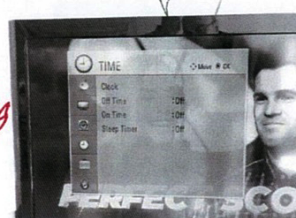


Picture Menu

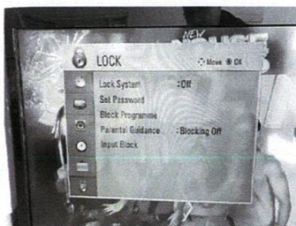


Options

Time Menu
- Isn't time setting automatic on digital TVs?



Lock
- child lock may be useful for when young grandchildren visit



input power TV

power input TV

channel volume mute

d-pad volume channel

SET-TOP BOX APPLE TV

touch pad

volume Siri

finger groove

most frequently used controls

Most Important Controls

- Power → obvious!
- Input → DVD, can be confusing
- Volume
- channel } everyone understands these
- D-pad - useful for menus but old people get confused

Devising [6-7]

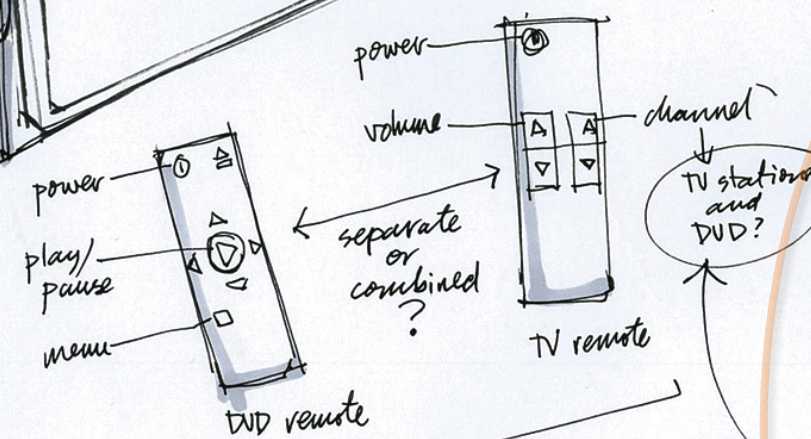
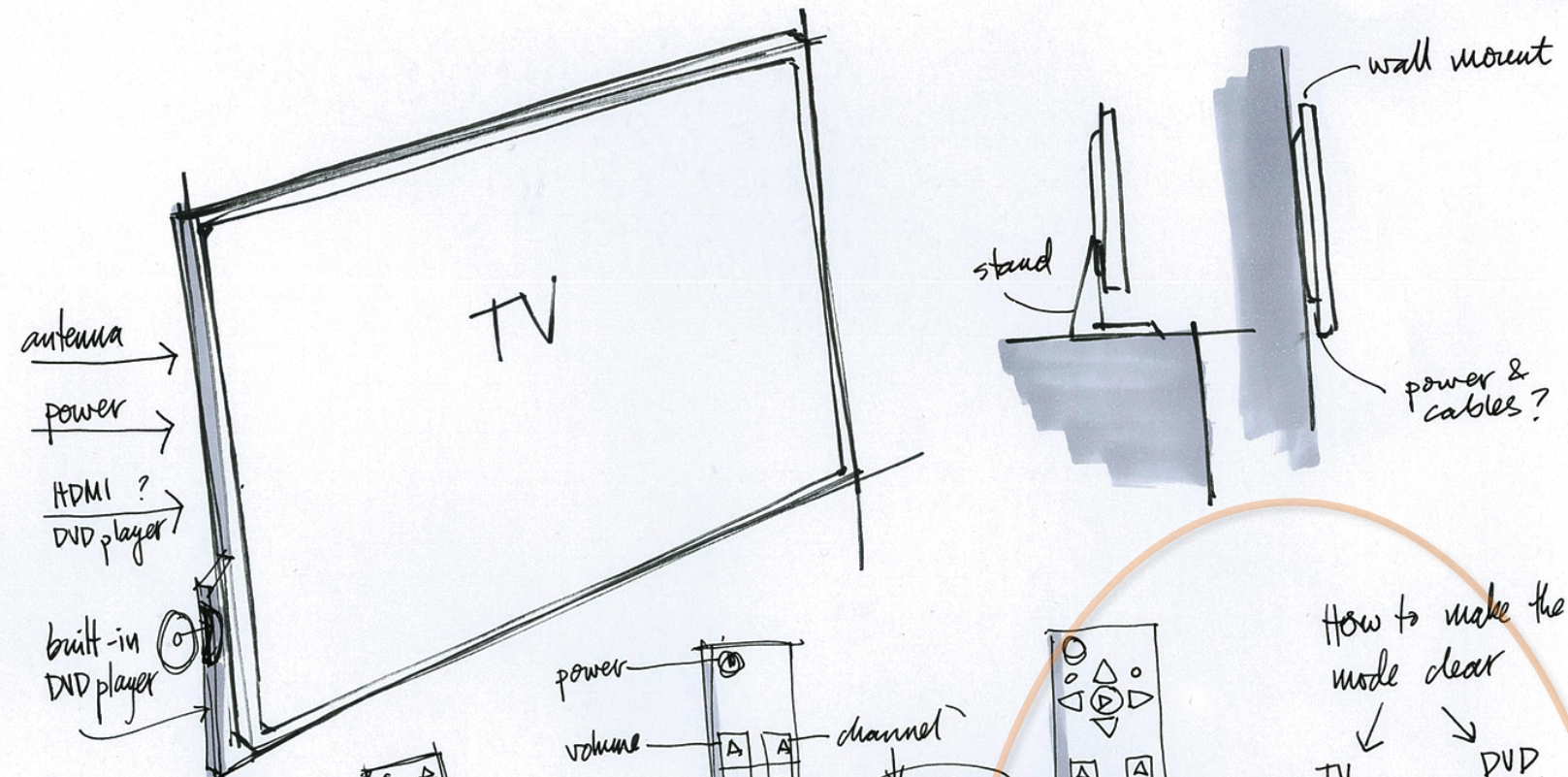
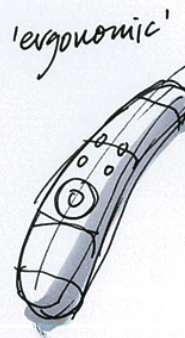
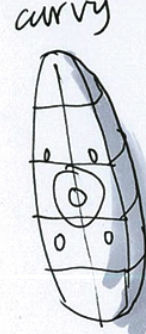
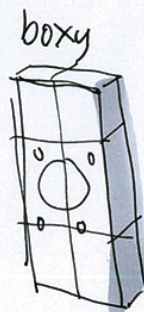
multiple ideas perceptively devised from different points of view — with each idea incorporating unique, credible and detailed attributes — using divergent thinking strategies in response to the HCD problem in the develop phase

Easy TV

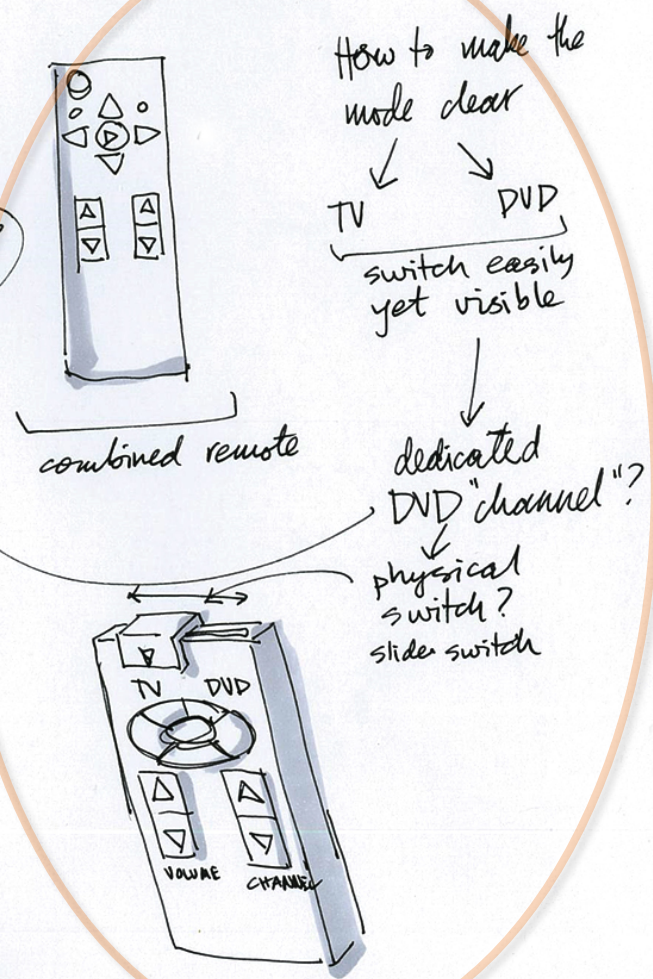
A large flat-screen TV with a very simple interface that elderly people can use and enjoy.

- simple remote
- set-up functions that someone else can do for them
- only the most important functions

Remote control styles



Pros and Cons	
Combined	<ul style="list-style-type: none"> • only 1. • fast
separate	<ul style="list-style-type: none"> • simpler • easy to use
	<ul style="list-style-type: none"> • more complicated • confusing? • two remotes to keep track of • 2x batteries



Devising [6-7]

multiple ideas perceptively devised from different points of view — with each idea incorporating unique, credible and detailed attributes — using divergent thinking strategies in response to the HCD problem in the develop phase

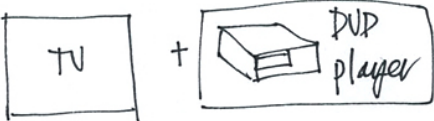
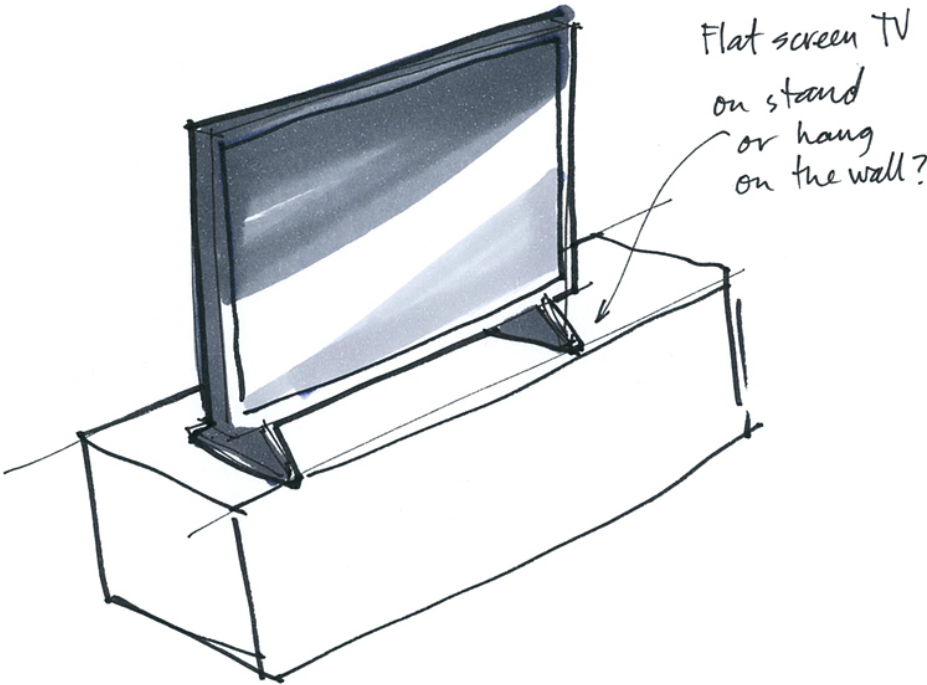
Representing and communicating [7-8]

sophisticated representation of ideas, a design concept and HCD information using fluent sequences of ideation sketching, schematic sketching and low-fidelity prototyping to progress understanding in the explore and develop phases

Synthesising and evaluating [9-10]

critical evaluation of the strengths, limitations and implications of ideas and a HCD concept against design criteria to make discerning refinements

SIMPLE TV DESIGNS

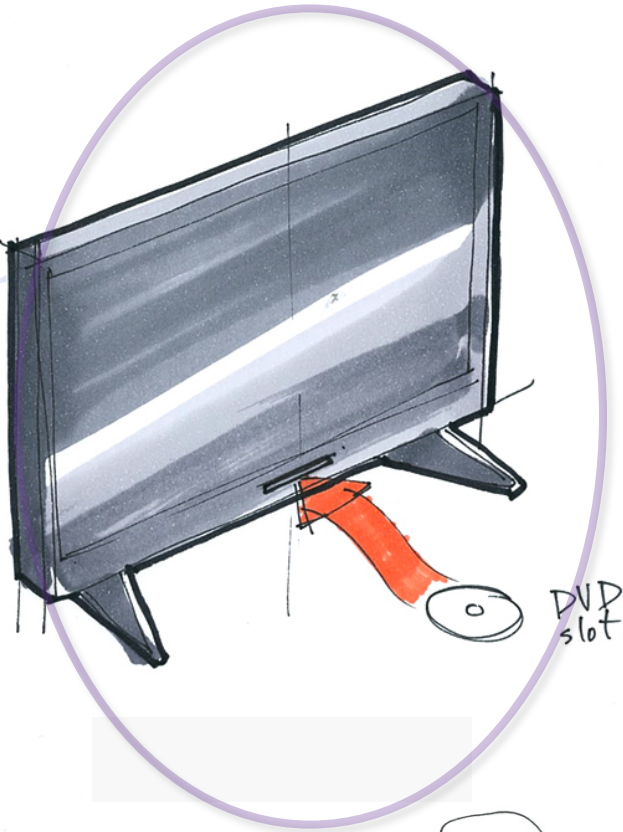


slot in side?

cut-out to show slot?
easier to find

DVD slots in the top of the TV?

is this too high if its on the wall?



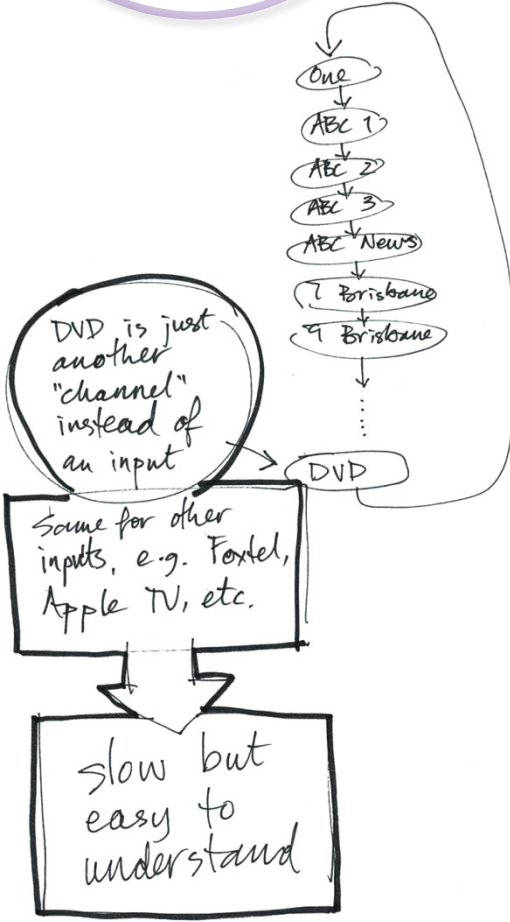
Feedback sheet: SIMPLE TV: Meeting with Allen and Lilly

Design criteria	☹	☺	☺	☺	Attributes to be used in the design concept
Make the TV and DVD physically easy to use				✓	DVD in front. Would the TV be deep enough for this?
Make the use of the TV and DVD easy to understand				✓	Combination of DVD and television. DVD in channel menu.
Have a remote control that is easy to hold or use on the arm of a sofa or armchair					?
Be easy to install and setup, perhaps with the assistance of a more technical user?			✓		No wires to plug in. Sits on shelf. Might not be able to mount on wall. Bedroom?
Make the most common functions easy to access				✓	It is clear where the DVD goes.
Be elegant yet simple in its function				✓	Yes, this is nice.
Be compatible with the décor and interior design tastes of older people					Nice, simple look. stand is OK - will sit on TV unit nicely.
Must not have highly technical features that are rarely used			✓		The idea for the input controls is good.
Must not be patronising to older people			✓		Looks like a normal TV

side

DVD slot in front

- easy to reach
- can light up to show where to put the disc.



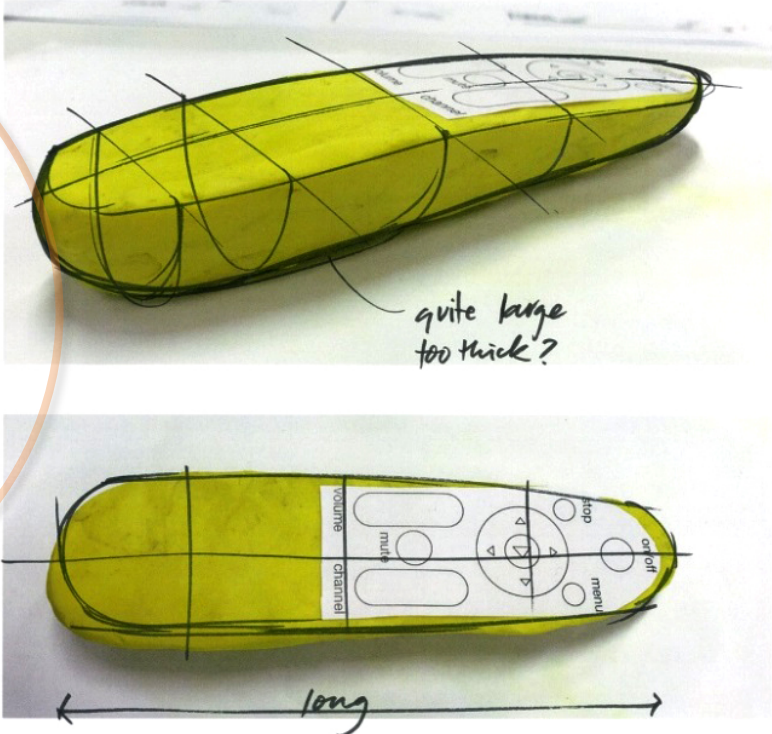
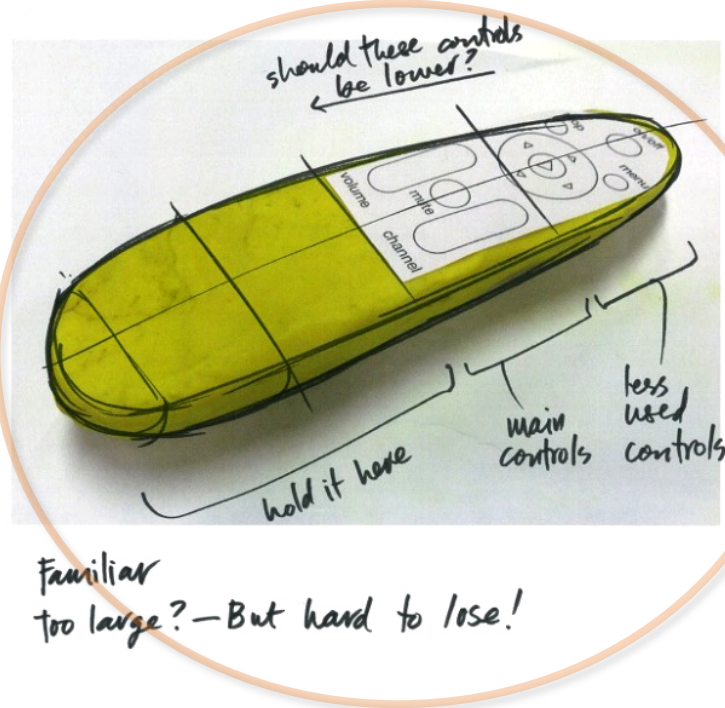
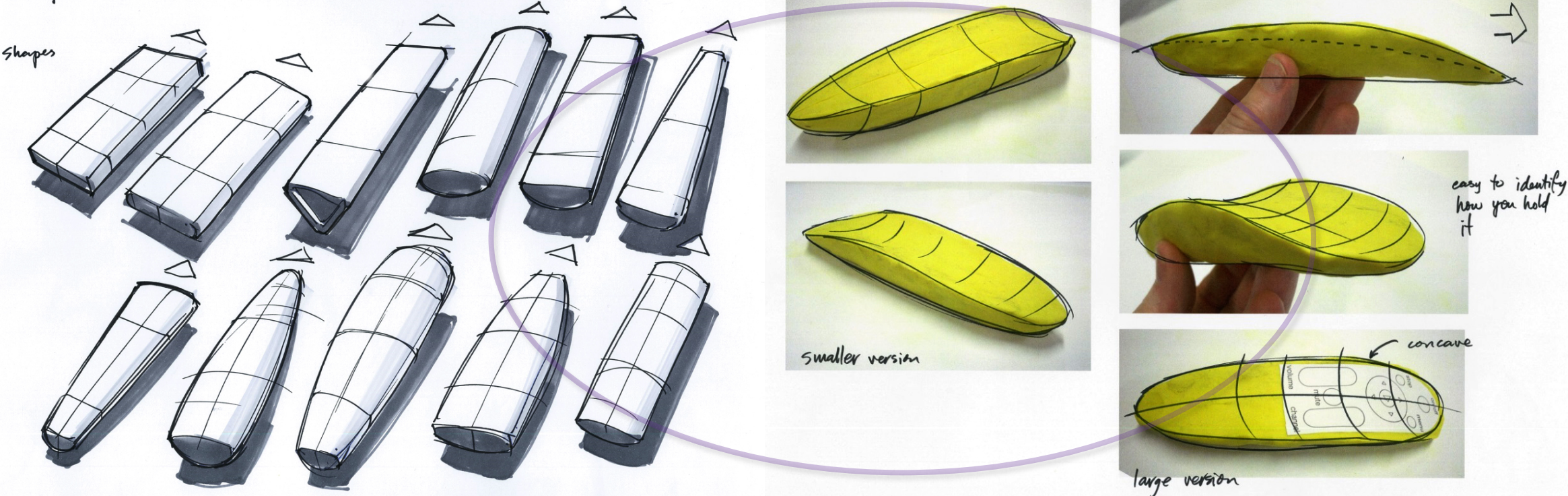
Devising [6-7]

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Representing and communicating [7-8]

sophisticated representation of ideas, a design concept and HCD information using fluent sequences of ideation sketching, schematic sketching and/or low-fidelity prototyping to progress understanding in the explore and develop phases

Simple TV/DVD Remote concepts, ideas Forms



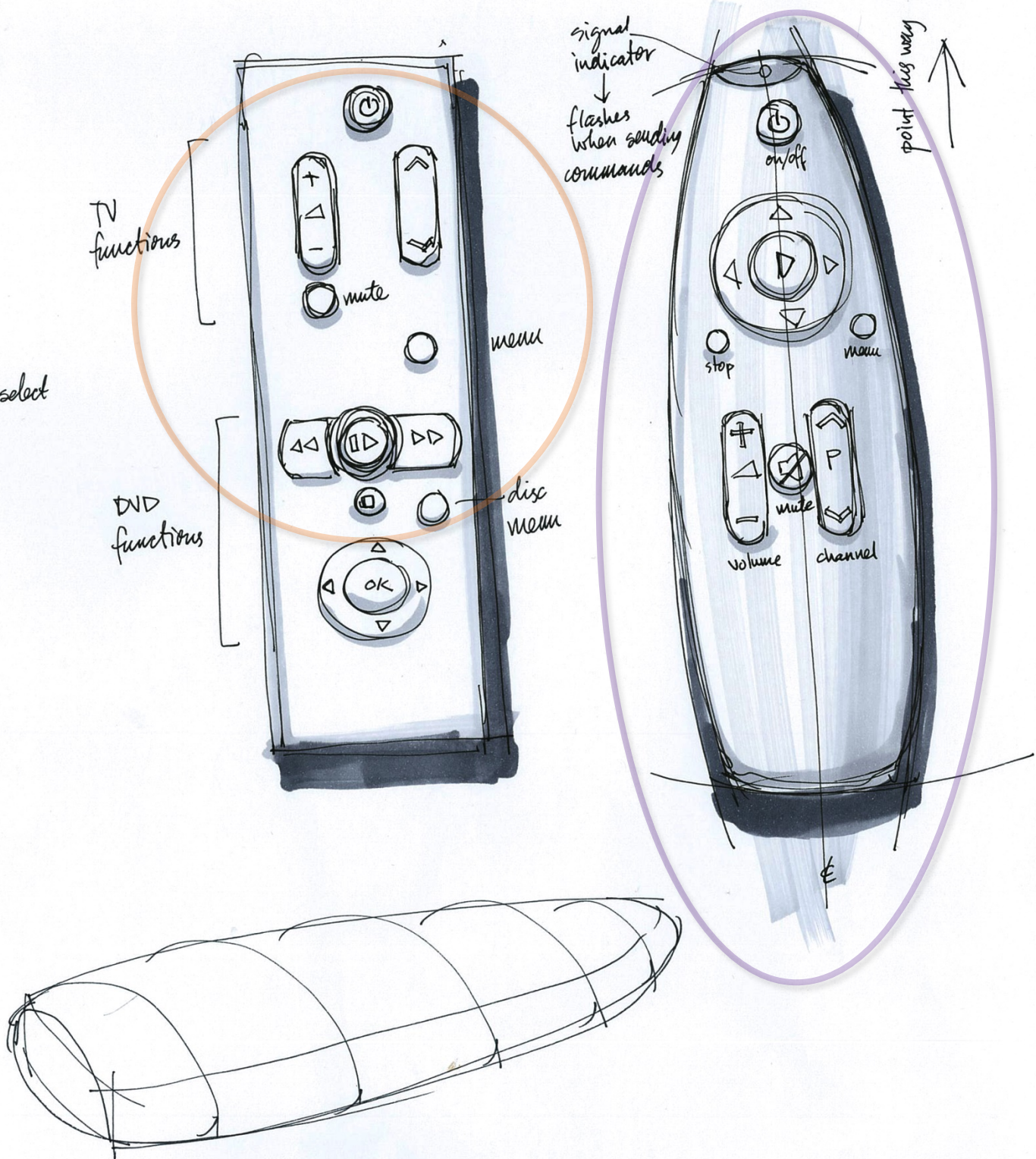
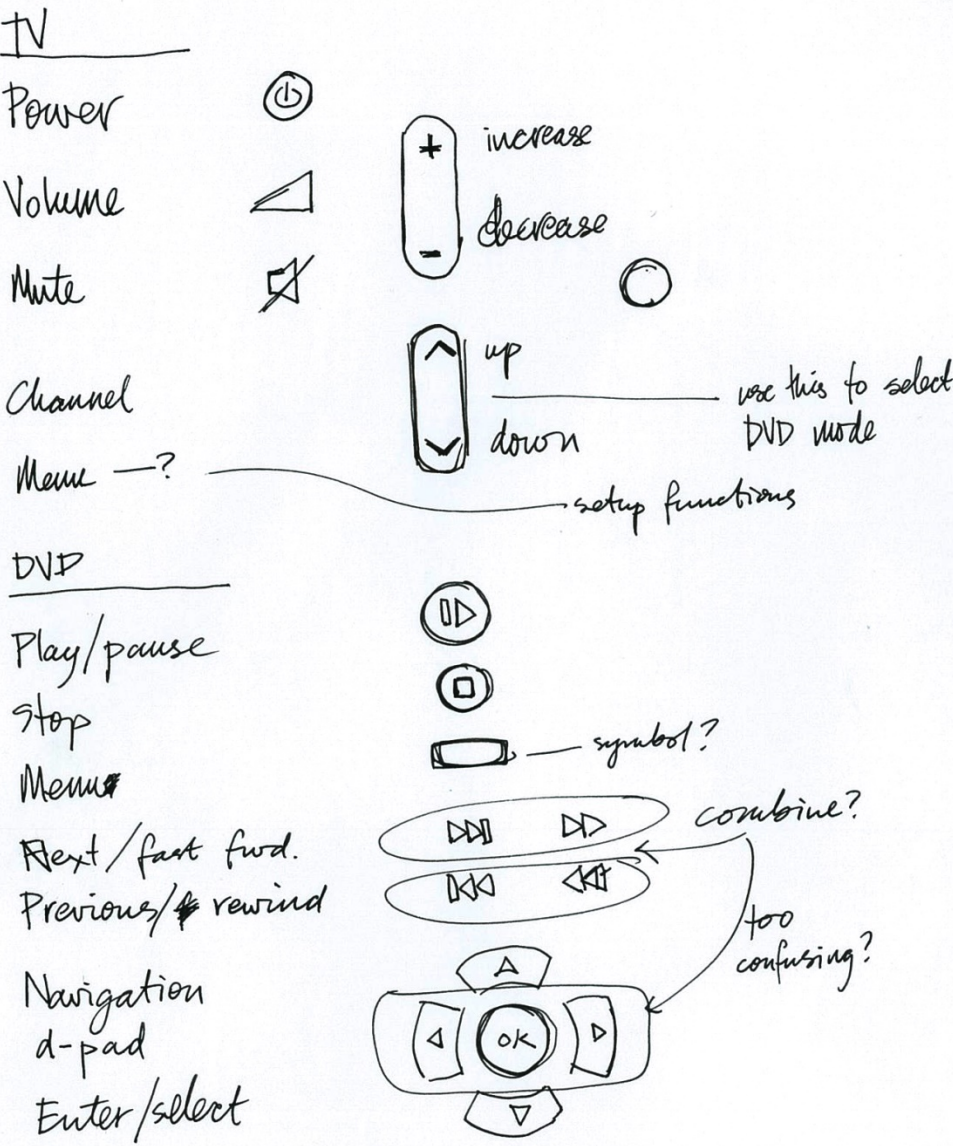
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Representing and communicating [7-8]

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Simple TV/DVD Remote: Buttons



Representing and communicating [7-8]

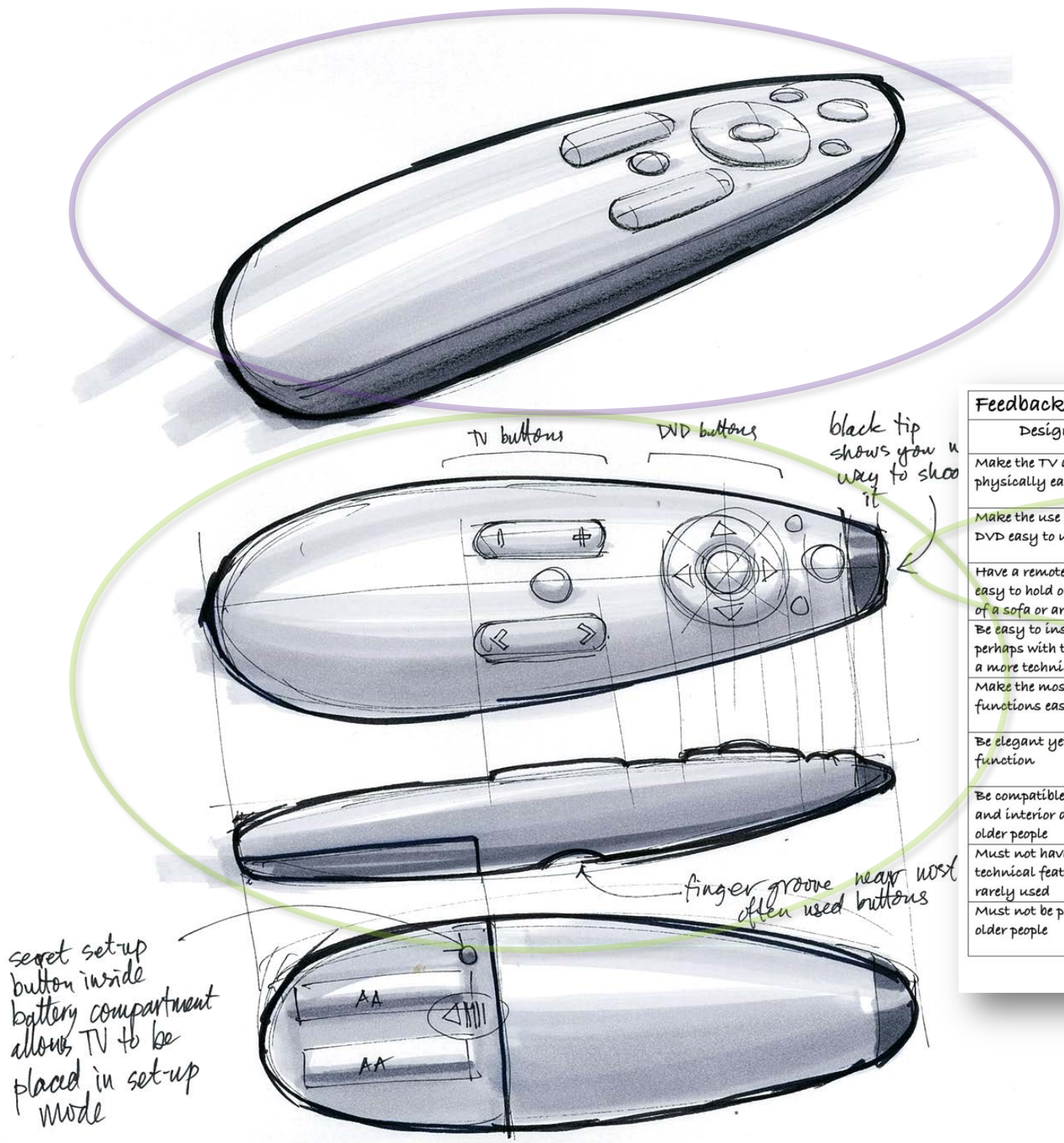
sophisticated representation of ideas, a design concept and HCD information using fluent sequences of ideation sketching, schematic sketching and/or low-fidelity prototyping to progress understanding in the explore and develop phases

Synthesising and evaluating [9-10]

coherent and logical synthesis by combining attributes of multiple ideas and HCD information to propose an innovative HCD concept in the develop phase

Synthesising and evaluating [9-10]

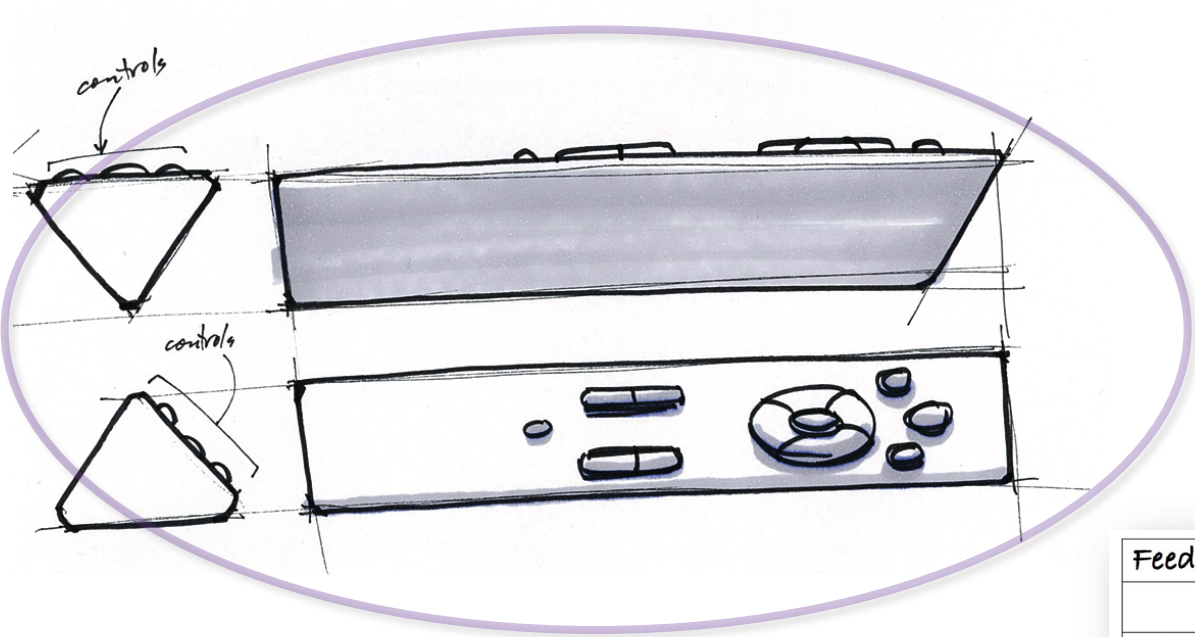
critical evaluation of the strengths, limitations and implications of ideas and a HCD concept against design criteria to make discerning refinements



Feedback sheet: Remote Control 1 - Meeting with Allen and Lilly						Attributes to be used in the design concept	
Design criteria	☹	☺	😊	😄	😊		
Make the TV and DVD physically easy to use		✓				Similar in style from existing remote controls but less complicated. TV Buttons.	
Make the use of the TV and DVD easy to understand			✓			Could the arrows on the circle be raised? Simple layout of buttons.	
Have a remote control that is easy to hold or use on the arm of a sofa or armchair		✓				Curved shape may roll off the arm of the couch. Would it get lost too easily between couch cushions?	
Be easy to install and setup, perhaps with the assistance of a more technical user?					✓	The hidden button is a clever idea.	
Make the most common functions easy to access			✓			Like the recessed on/off button.	
Be elegant yet simple in its function						The shiny black tip - shows which way to point and you can feel which way to hold it. Doesn't particularly appeal.	
Be compatible with the décor and interior design tastes of older people						Nice and simple.	
Must not have highly technical features that are rarely used			✓			No problem with this but perhaps it could have more information or button labels. Maybe this would make it feel too complicated though.	
Must not be patronising to older people			✓				

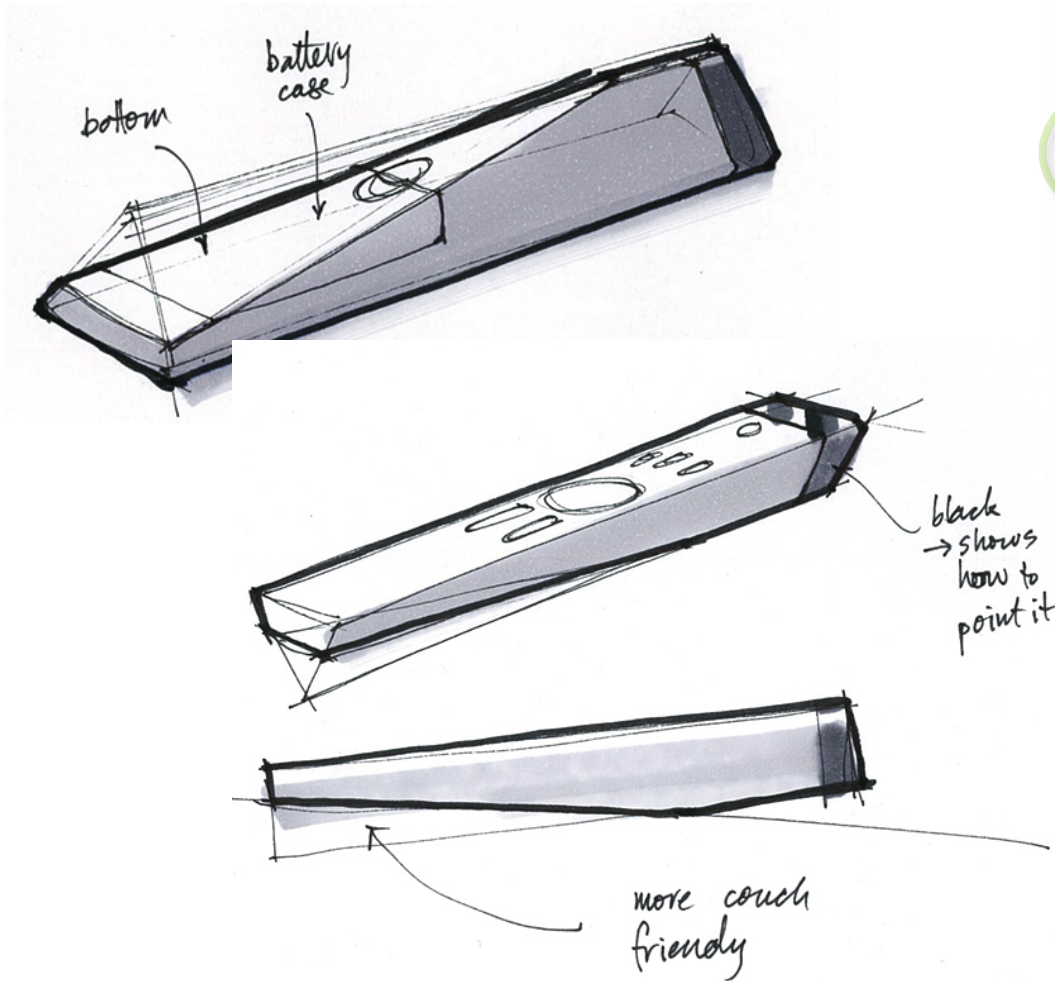
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critical evaluation of the strengths, limitations and implications of ideas and a HCD concept against design criteria to make discerning refinements



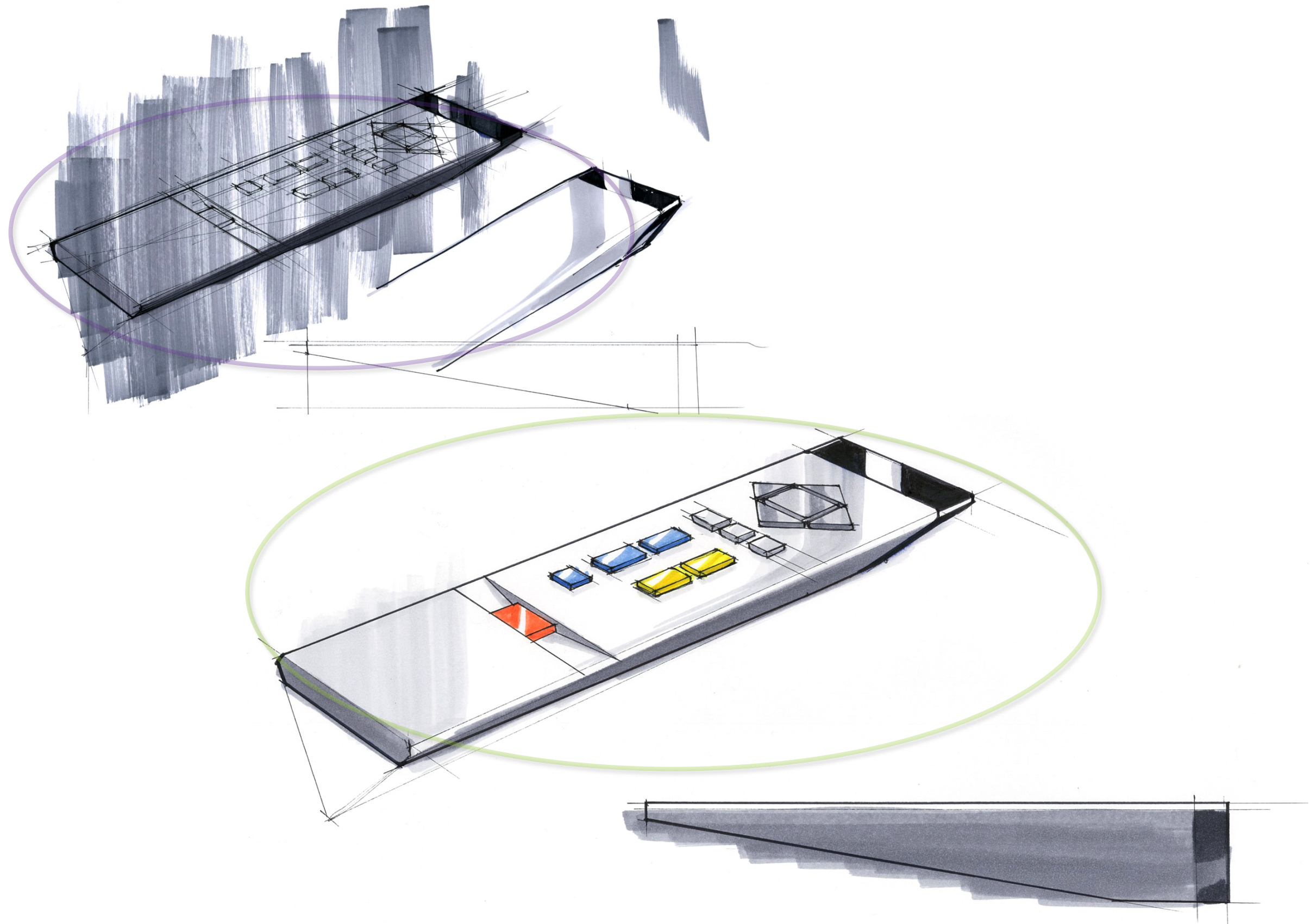
Feedback sheet: Remote Control 2. Meeting with Allen and Lilly					Attributes to be used in the design concept
Design criteria	☹	☺	😊	😄	
Make the TV and DVD physically easy to use			✓		Needs a flat side so it sits facing up. Not enough information on the buttons.
Make the use of the TV and DVD easy to understand			✓		could the control layout from Concept 1 be used? Might be easier to read. Colour? Feel?
Have a remote control that is easy to hold or use on the arm of a sofa or armchair				✓	Flat base is good on bottom drawing.
Be easy to install and setup, perhaps with the assistance of a more technical user?		✓			No information on this. Does it use the hidden set-up button like Concept 1?
Make the most common functions easy to access			✓		On/off button location is really clever.
Be elegant yet simple in its function				✓	Nice to have a different, distinct style of remote control.
Be compatible with the décor and interior design tastes of older people				✓	The shape is a good match for the style of the TV— both rectangular /angular.
Must not have highly technical features that are rarely used			✓		Looks simple enough to use easily. Not sure about set-up functions.
Must not be patronising to older people				✓	Simple, clean lines without looking simplistic. Works well.

Representing and communicating [7–8]

sophisticated representation of ideas, a design concept and HCD information using fluent sequences of ideation sketching, schematic sketching and low-fidelity prototyping to progress understanding in the explore and develop phases

Synthesising and evaluating [9–10]

coherent and logical synthesis by combining attributes of multiple ideas and HCD information to propose an innovative HCD concept in the develop phase



Part B

Design brief

The main constraint of this project was to use design to make the experience of ageing seem more attractive. The focus had to be on people over 60 years old. I identified my grandparents (Allen and Lilly) as older people who I could help. I interviewed and observed them, and identified six different needs and wants. The problem that I have selected was identified by my grandfather. He mentioned their interest in watching sport and movies on TV and DVD. Their TV is old and they would like to update it, but are frustrated by current televisions and DVD players. New TVs are complicated to use and have a large range of features and controls. This includes the remote controls and the function screens on the TV. Additionally, the terminology used is unfamiliar and confusing. My grandmother prefers to leave this to my grandfather, but even he finds it puzzling.

I have decided to design an easy TV that will suit an older user like my grandparents. The design should focus on improving the enjoyment of the TV by older people. I will do this by considering both their physio-pleasure and psycho-pleasure. The problem is defined by the technical features, but the aesthetics of the TV and controls must also be considered.

Design criteria

Must:

- make the TV, DVD and remote control physically easier to use (useful)
- be elegant yet simple in its function to make the TV, DVD and remote control easier to understand (accessible)
- be compatible with the décor and tastes of older people (aesthetic).

Should:

- include aspects that are new or unique compared to commonly available TV and DVDs (innovative).

Must not:

- be patronising to older people or have limited appeal to a very small number of users (sustainable).

Exploring [9–10]

discerning description of the features that define a HCD problem and essential design criteria based on stakeholders' requirements and principles of good design

Representing and communicating [7–8]

discerning decision-making about, and fluent use of, written conventions, features and design-specific language to present a design brief for stakeholders

Synthesising and evaluating [9-10]

critical evaluation of the strengths, limitations and implications of ideas and a HCD concept against design criteria to make discerning refinements

Representing and communicating [7-8]

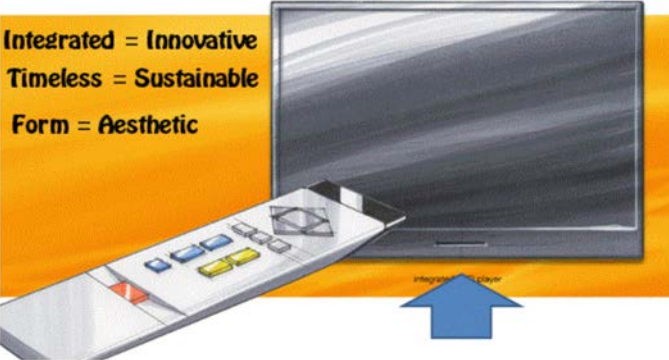
discerning decision-making about, and fluent use of, spoken features, design-specific vocabulary and visual elements and principles to present a design proposal for a live or virtual stakeholder audience

Part C

Design Proposal

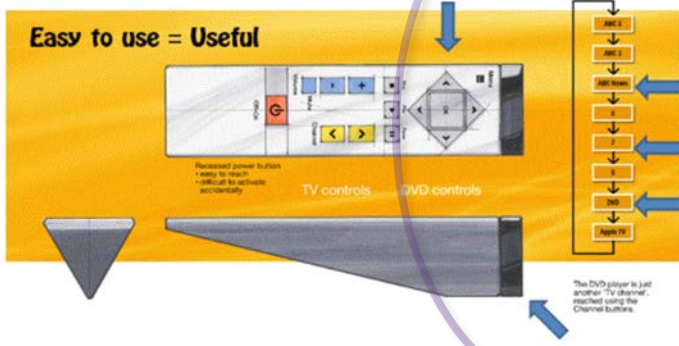
Easy TV

Integrated = Innovative
Timeless = Sustainable
Form = Aesthetic



Easy TV

Simplified controls = Accessible
Easy to use = Useful



Recessed power button easy to reach with all TV remote functionality


TV controls DVD controls

The DVD player is just another TV channel accessed using the Channel buttons

Easy TV

Limitations Implications

Suits older people
Elegant yet simple
Easy to use and understand



Thank you

Welcome, I'd like to talk about the Easy TV that I designed for my grandparents.

The strengths of my design and main innovations are that the DVD function is built into the front of the TV where it is easy to find. The remote control matches the square physical form of the TV so it is obvious that it is the TV remote and communicates its intended function. This also is likely to make the style of the remote and TV more timeless as the aesthetics relate to the function rather than a current trend in form or colour. The remote is not too large or too small for Allen and Lilly. They said it felt just right when they were holding it and liked the aesthetics of the shape. I've also designed it so that the buttons that you use most are in easy reach.

The volume and channel buttons are right under your thumb and I put the recessed power button right at the bottom where you can access it without moving your hand. I've put the LED transmitter in the front and made it like a shiny glass, which makes it accessible as it is easy to know which way to point it. These things make it suit older people without being patronising.

To make the use of the TV and DVD easier to understand for Allen and Lilly, I have simplified the controls to make them accessible. In the top half of the remote control, I put the essential DVD controls. I removed a whole lot of functions for the DVD that Allen and Lilly didn't use or know what they were for.

Allen and Lilly found the input button confusing as they said that when it was pressed the TV behaves differently. Instead I design my TV user interface to allow the user to get the DVD functions just by using the channel button. It's by simply going up and down scrolling through the list of TV stations that you eventually get to the DVD function.

The main limitations with my design is that by simplifying the TV, DVD and remote they may not fulfil their intended purpose for all older people. Allen and Lilly wanted an easy to use TV, but other older people might want the functions I have eliminated. This may also affect the sustainability of the design as less people would be likely to buy this TV second hand if it had less functions than other TVs.

An implication of my design is that by removing the controls that are to do with setting up there would have to be some other way to do the initial setup. Perhaps there could be a hidden button on the remote that a repair person could use that no one ever touches after the setup of the TV.

In summary, the Easy TV is perfect for older people wanting a combination TV and DVD that is easy to use and understand. So that's my design for the Easy TV and I hope you found it interesting.