Professional Paper https://doi.org/10.24867/GRID-2026-p27

More Than Hue—A Methodological Approach to Colour Design for Visual Identity and Branding

ABSTRACT

The use of colour in branding has long relied on fixed hue–meaning associations: blue for trust, red for energy, green for sustainability. Treated as rules rather than conventions, these associations limit creativity and differentiation, and in sustainability communication the overuse of green has produced predictable, homogenised visual identities. Through the case of ECODeCK, a research project that supports manufacturing companies in a paradigmatic shift towards sustainable transition, this paper presents a six-step colour design methodology that considers hue, lightness and saturation together: i) researching the project's context and aims; ii) exploring and analysing colour benchmarking; iii) translating concepts into colour attributes; iv) defining a key colour identity palette; v) testing and applying the palette; and vi) scaling it into a chromatic system. The resulting identity departs from the green convention of sustainability communication by distributing meaning across the key palette and the extended chromatic system, rather than relying on a single symbolic hue. The case also shows that the methodology structures, rather than replaces, the designer's judgement. The paper contributes to the beyond-hue approach to colour meaning with a practical methodology for colour design in visual identity, and argues for colour design as a tool for research and knowledge dissemination.

Ingrid Calvo Ivanovic [1]
Francesca Mattioli [2]

[1] Design Department, Universidad de Chile, Santiago, Chile
[2] Department of Design, Politecnico di Milano, Milan, Italy

KEY WORDS
Colour design methodology, colour in branding and visual identity, colour semantics, beyond-hue approach, ECODeCK project

1. Introduction

1.1. The problem

Colour is one of the first elements through which a visual identity is recognised. Branding practice has long relied on shortcut associations between particular hues and particular meanings: blue for trust and reliability, red for energy and urgency, green for nature, health and sustainability. These shortcuts persist because they work at a basic level. They are widely shared, quickly read and easily justified to clients. Their limitation appears when designers treat them not as conventions but as fixed, universal and sufficient explanations of what colour means.

Sustainability communication shows this limitation clearly. Green has become the default visual cue for environmental responsibility, to the point that colour alone can shift judgement. Sundar and Kellaris (2017) found that logos in colours perceived as eco-friendly made ethically ambiguous retail practices appear more ethical. Pancer, McShane and Noseworthy (2017) showed that green used as an isolated environmental cue on packaging can even lower perceived product efficacy, because it activates competing expectations about what the product is. When a colour can confer an ecological image independently of the practice behind it, its communicative value erodes. The code becomes generic, equally available to genuine and superficial commitments, and identities that adopt it converge on a homogeneous visual language. The

problem, then, is not that colour associations exist. It is that they are used as if hue alone carried meaning.

The question designers usually ask, “what does this colour mean?”, assumes that meaning resides in hue. A more productive question is how colour attributes can be systematically explored and configured to communicate a particular identity in a particular context. Research on colour emotion has shown for decades that lightness and saturation carry strong and consistent connotations (Valdez and Mehrabian, 1994; Gao and Xin, 2006). Tools now exist that translate this knowledge into design guidance, such as the Colour Meaning Matrix (Calvo Ivanovic, 2024). However, these tools operate at the level of a single palette. A visual identity is not a single palette. It is a system of colours with different roles, applied across media, that must remain recognisable, legible and coherent. A method that carries a beyond-hue approach through the full development of a chromatic identity system has yet to be articulated.

1.2. Aim and contribution

This paper presents a six-step colour design methodology for visual identity, developed through the colour identity of ECODeCK (Eco-design Circular Knowledge), a design research project at Politecnico di Milano. The methodology was developed in practice and formalised retrospectively. The paper therefore adopts a practice-based case study approach and addresses the following question: *how can a structured colour design methodology move visual identity development beyond stereotypical hue–meaning associations, while producing coherent, distinctive and functional colour systems?*

The paper makes three contributions. First, it describes the six-step methodology that considers hue, lightness and saturation together at every stage, from context research to the scaled chromatic system. Second, it integrates the Colour Meaning Matrix into an identity-design process and extends it from palette selection to system design: semantic dimensions that conflict within a single palette are distributed across the levels of the chromatic system. Third, it argues that colour design can act as a research and knowledge-dissemination tool, not merely an aesthetic layer added to an identity.

Section 2 reviews the shift from hue-based to multidimensional accounts of colour meaning. Section 3 introduces ECODeCK and its colour challenge. Section 4 presents the methodology step by step through the case. Section 5 shows the resulting identity and its applications, and Sections 6 and 7 discuss implications, limitations and conclusions.

2. From hue-based colour meaning to a beyond-hue approach

2.1. Colour meaning and the hue paradigm

Most popular and professional accounts of colour meaning organise associations by hue, an orientation described as the “hue paradigm” (Calvo Ivanovic, 2024; Divers, 2023). This paradigm faces two difficulties. The first is plurality: the same hue carries contradictory meanings. Red has been linked both to danger in achievement contexts and to attraction in relational ones (Elliot & Niesta, 2008). Red has also been matched with both happy and angry faces, and blue with both calm and sad ones (Palmer et al., 2013). The second is cultural variability. Some hue associations differ markedly between cultures, yet studies comparing affective responses across countries report considerable consistency when responses are described in terms of other colour attributes (Adams & Osgood, 1973; Gao & Xin, 2006). Both difficulties point the same way. Hue on its own is an unstable carrier of meaning, and much of what appears to be hue-driven may depend on how light, dark, vivid or muted a colour is.

2.2. Chromatic stereotyping in sustainability communication

In branding, the hue paradigm hardens into sector conventions. Repeated across an industry, these conventions produce homogenisation, weaken differentiation, narrow creative options and privilege one culturally specific reading of colour. Sustainability is an acute case. The palette of saturated, mid-lightness greens that evoke foliage has become so widespread that it signals sustainability in general, independently of the practice it represents. The finding that green and blue can evoke similar perceptions of eco-friendliness (Sundar & Kellaris, 2017) suggests that even this convention is less hue-bound than it appears. If ecological meaning does not depend on green specifically, the convention reflects habit more than necessity. That leaves room for identities that communicate sustainability through other chromatic configurations.

2.3. Beyond hue: lightness and saturation as carriers of meaning

A substantial body of research shows that lightness and saturation shape colour meaning at least as much as hue does. Valdez and Mehrabian (1994) found that saturation consistently affected arousal and lightness affected dominance, while pleasure increased with both. When lightness and saturation were controlled, yellow, conventionally “happy”, was rated among the least pleasant hues. Wright and Rainwater (1962) found that concepts such as happiness and showiness depended mainly on lightness

and saturation rather than hue. Gao and Xin (2006) and Solli and Lenz (2011) likewise concluded that saturation and lightness matter more for colour emotion than hue.

Work using Osgood's semantic differential points in the same direction. Its three core dimensions of meaning are evaluation, potency and activity (Osgood et al., 1957). Across cultures, evaluation is linked mainly to lightness, potency to darkness and saturation, and activity to saturation (Adams & Osgood, 1973). The Colour Meaning Matrix (CMM) operationalises these findings for design (Calvo Ivanovic, 2024, 2025). It asks the designer to assess a concept along the three Osgood dimensions plus a fourth, understanding (simple–complex), and gives orientations for hue, lightness and saturation for each pole. The CMM was developed through palette-construction exercises with more than 300 design students in Chile and Italy, and it is explicitly intended as an orientation rather than a formula.

2.4. From palettes to chromatic systems

Divers (2023) notes that most colour-meaning research studies colours in isolation, whereas designers manage several colours at once, and that generalisations about a hue usually refer to its most saturated form, which designers rarely use. Visual identity sharpens this gap. An identity needs a small set of key colours with clear roles, an extended system for different applications, and functional performance across print and digital media. Established tools linking concepts to colour, such as Kobayashi's (1981) Colour Image Scale and the CMM, guide the choice of colours that match a concept. They do not specify how meaning is maintained when a palette scales into a system, nor what to do when a project's concepts call for incompatible attribute orientations. The methodology presented in Section 4 addresses both questions.

3. The research context and colour challenge

3.1. The project: Eco-Design Circular Knowledge (ECODeCK)

ECODeCK (Eco-design Circular Knowledge) is a design research project of the Department of Design, Politecnico di Milano, developed within the Italian national research initiative MICS – *Made in Italy Circolare e Sostenibile* (Circular and Sustainable Made in Italy) (Bertola et al., 2025). It addresses the sustainable transition of the Italian fashion and furniture industries. These two sectors are central to the Made in Italy identity and face growing environmental and regulatory pressure. Many companies still approach sustainability through compliance and incremental adjustments. It rarely becomes a principle that reshapes how they design and produce (Gaziulusoy & Erdoğan Öztekin, 2019; Davelaar, 2021).

The project starts from the premise that this transition cannot be achieved through technical solutions alone. It also depends on the competences, mindsets and organisational cultures of the people who carry it out (Wiek et al., 2011; Rieckmann, 2012). For this reason, ECODeCK frames its contribution as capacity building, aiming to develop the ability of individuals, organisations and wider ecosystems to understand sustainability challenges and act on them over time (Peiró et al., 2021).

This is where ECODeCK differs from conventional approaches to education for sustainability. Those approaches tend to be transmissive: they deliver standardised knowledge to learners positioned as compliant recipients (Jickling & Wals, 2008). ECODeCK instead adopts a design-based, transformative learning approach (Mezirow, 2003; Sterling, 2011). Participants work on real, open-ended problems from their own organisational contexts. The process encourages them to question established assumptions and to build new ways of acting through iteration, collaboration and reflection.

Table 1

Key dimensions of the ECODeCK project

Dimension	ECODeCK
Project values	Sustainability as a situated, systemic and evolving process, interpreted within each organisational context
Objectives	Building long-term capacity for sustainable transition at the individual, organisational and ecosystemic levels
Stakeholders	Managers and employees of fashion and furniture companies, design researchers, territorial and institutional actors
Sustainability discourse	A transformative, design-based perspective aiming to foster a paradigmatic shift, in which sustainability is enacted through critical reflection, participation and collaborative practice
Communication needs	Making frameworks, training tools and research outcomes accessible to non-designer audiences across media and formats.
Visual identity requirements	A coherent, recognisable identity that is visible, legible and versatile across print and digital applications.

Sustainability is therefore not treated as a fixed set of prescriptions. It is treated as a situated, evolving process that each organisation has to interpret for itself.

The same stance shaped the project's visual communication. A project that questions prescriptive, one-size-fits-all accounts of sustainability could not credibly present itself through the most prescriptive visual code of sustainability.

3.2. The chromatic challenge

Defining ECODeCK's visual identity meant translating the project's defining dimensions into colour. These dimensions are summarised in Table 1: its values, objectives, stakeholders, position in the sustainability discourse, communication needs and visual identity requirements.

Read against these dimensions, the conventional colour code for sustainability is a problem. The ecological-green-grass palette of saturated, mid-lightness greens that evoke foliage and nature is immediately legible, but it has been used so widely that it signals sustainability generically, whatever the practice behind it. Such a code sits uneasily with a project that frames sustainability as situated and evolving, and that aims to foster a paradigmatic shift (Table 1). It also risks reaching the project's stakeholders through the same visual language as the generic messaging many of them already meet with scepticism. This tension defines the design research problem: *how can a project communicating sustainability avoid visually reproducing the very conventions it seeks to challenge, while remaining recognisable, coherent and functional?*

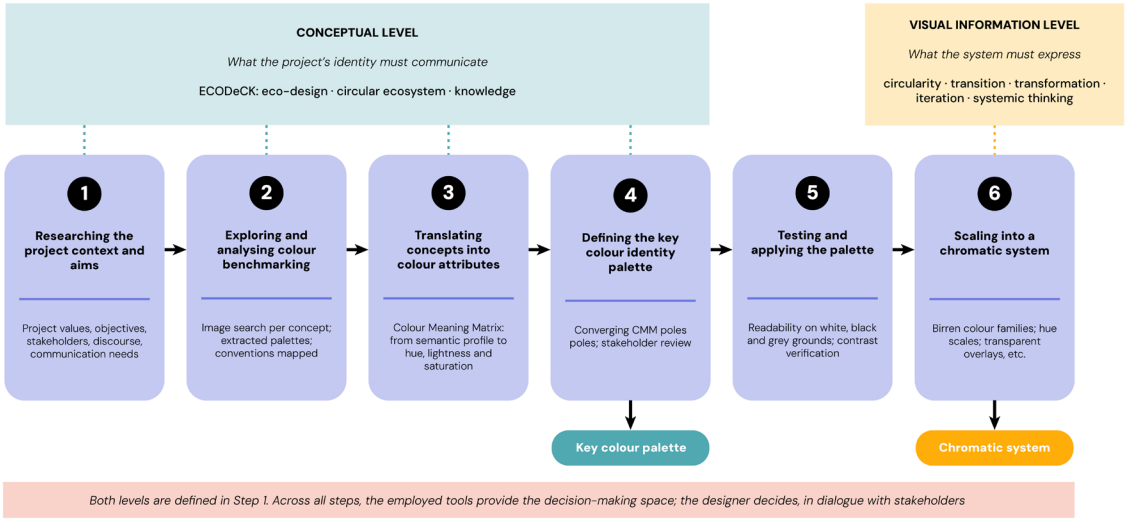
The question has two sides. The first is expressive: the identity has to convey ECODeCK's values and discourse. The second is functional: the identity has to meet the communication needs and visual requirements listed in Table 1. The project therefore decided to move beyond the conventional green-based palette. This did not mean replacing one hue with another. Choosing a different "meaningful" colour would have repeated the logic of fixed hue–meaning associations. Instead, the decision required changing how colour meaning is constructed: through the combined configuration of hue, lightness and saturation, and through the relationships within a chromatic system. Section 4 presents the six-step methodology developed to do this.

4. The six-steps colour design methodology

The following methodology was carried out in practice and formalised afterwards. Each subsection below describes the purpose and procedure of a step, followed by its application in ECODeCK. The methodology is not a formula that outputs colours. Its tools — the CMM orientations, the benchmark, the Birren colour families and the hue scales — structure the decision space and make each decision explicit and traceable. Final choices remain with the designer, and in ECODeCK they were also shaped by dialogue with the project's stakeholders (Section 4.4).

4.1. Step 1 – Researching the project context and aims

Colour selection begins with research rather than preference. The first step establishes what the identity must communicate, to whom, and under what functional constraints. In ECODeCK, this research drew on the project documentation summarised in Table 1: its values, objectives, stakeholders, position in the sustainability discourse, communication needs and visual identity requirements, the review of project documents and several meetings with the research team.



» **Figure 1:** *The six-step colour design methodology and its two levels of meaning*

The six steps are organised around two levels of meaning (Figure 1). The *conceptual* level concerns the ideas the identity must communicate; in ECODeCK, these were the three concepts named in the project's title: eco-design, circular ecosystem and knowledge. This level drives the selection of the key colours (Steps 1–4). The *visual information* level concerns the formal and relational qualities the identity must express as a system; these were taken from the project's key dimensions: circularity, transition, transformation, iteration and systemic thinking. This level drives the expansion of the key colours into a chromatic system (Step 6). Step 5 tests the key palette before it is scaled.

4.2. Step 2 – Exploring and analysing colour benchmarking

The second step maps the visual conventions already attached to each concept. Its aim is not to gather inspiration but to identify which chromatic codes the new identity might reinforce, depart from, or deliberately challenge. For each of the three conceptual-level terms, a Google image search was conducted between October and December 2024, and between 36 and 40 images per concept were compiled into a visual grid. A six-colour palette was then extracted from each grid to summarise its dominant chromatic territory (Figure 2). Because search results vary with location and personalisation, the benchmark should be read as a snapshot of prevailing visual conventions rather than a systematic sample.

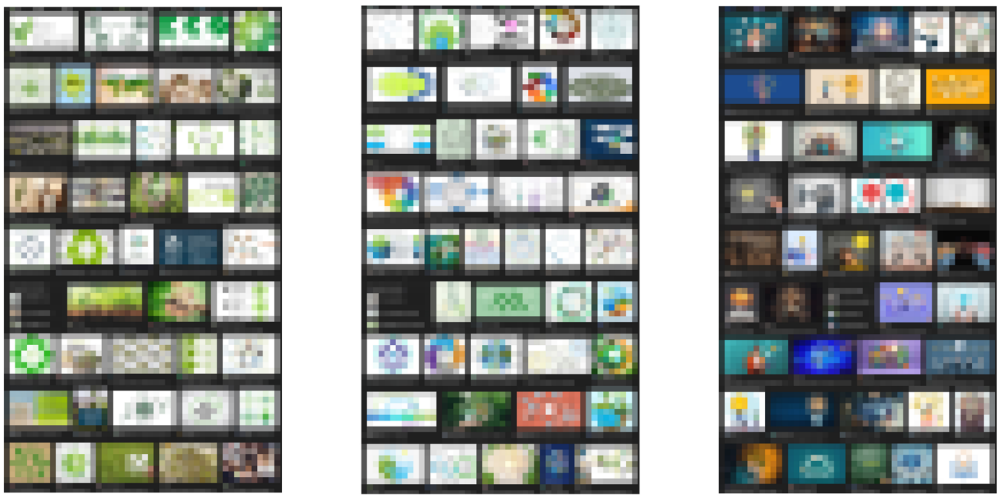
The three benchmarks differed sharply. *Eco-design* was dominated by greens across a range of lightness and saturation, accompanied by earth tones and pale sky blue: the conventional sustainability palette described in Section 2.2. *The circular ecosystem* was more heterogeneous, combining blues, mint and cyan with warm accents and multi-hue diagrams. *Knowledge* clustered around blues and teals, with amber, lavender and greyed tones. The benchmark therefore confirmed that the green convention is specific to the eco-design concept and does not extend to circularity or knowledge, which offered broader chromatic territories. The hues eventually selected all have counterparts within the circular ecosystem and knowledge benchmarks. Differentiation was thus sought specifically from the eco-design convention, and through the configuration of colour attributes rather than through unprecedented hues.

4.3. Step 3 – Translating concepts into colour attributes

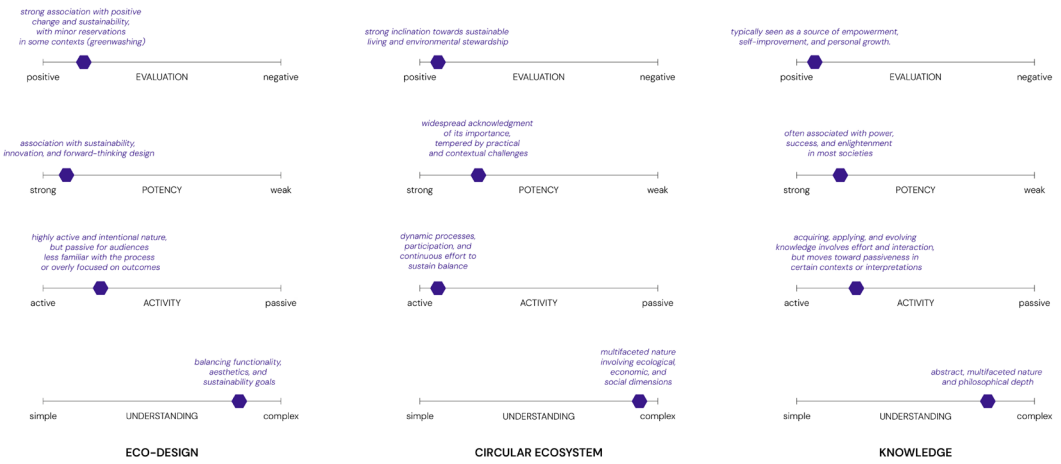
The third step makes the beyond-hue approach operational. Instead of asking which hue represents a concept, it asks which configuration of hue, lightness and saturation corresponds to the way the concept is perceived. ECODeCK used the Colour Meaning Matrix (Calvo Ivanovic, 2024) for this purpose. Following the CMM protocol, each conceptual-level term was assessed on the four bipolar dimensions of evaluation, potency, activity and understanding, with a written rationale for each position (Figure 3).

The three concepts produced closely aligned profiles. All were assessed as positive, strong, active and complex, with minor differences in degree; eco-design, for example, was assessed as active, but less so for audiences unfamiliar with design processes. Table 2 lists the CMM orientations corresponding to these four poles.

Table 2 reveals a conflict that the CMM, as published, does not resolve. Positive, strong and active converge on a shared configuration: basic hues, medium lightness and medium-to-high saturation. Complex calls for the



» **Figure 2:** *Colour benchmarking for the three conceptual-level terms, with Google image search*



» **Figure 3:** *Semantic profiling of the conceptual-level terms with the Colour Meaning Matrix*

opposite on all three attributes. No single set of colours can satisfy all four poles at once. The methodology therefore distributes the semantic dimensions across the levels of the chromatic system. The key palette is weighted towards the converging dimensions (positive, strong and active), while complexity is carried mainly at system level, through relationships between colours rather than individual colours (Step 6). As Step 4 shows, this distribution is a matter of weighting rather than strict separation: one key colour was deliberately configured to bring complexity into the palette itself.

This shift brings the CMM orientation for complexity (low saturation) into the key palette. It adds diversity to the palette's attribute configuration and gives it a quality of sophistication associated in particular with the knowledge concept, whose profile emphasised abstraction and multifaceted depth. The episode shows the conflict identified in Step 3 surfacing in practice: a palette built only on the converging poles was perceived as incomplete, and stakeholder review led to a correction expressed through saturation rather than through a change of hue.

Table 2

CMM orientations for the ECODeCK semantic profile (after Calvo Ivanovic, 2024)

Pole	Hue	Lightness	Saturation
Positive	Basic, easily named hues; also, white and pastels	Medium to high	Medium to high
Strong	Basic, easily named hues; also, black and dark shades	Medium to low	Medium to high
Active	Basic, easily named hues	Medium	High
Complex	Very mixed hues, difficult to name	High or low	Low

4.4. Step 4 – Defining the key colour identity palette

Candidate colours were generated for each converging pole (Figure 4a), and four were selected from the intersection of the active orientation with the positive and strong ones: yellow, cyan, red and violet, complemented by black and white. The first proposal used four highly saturated colours, including a clean, vivid cyan. When this proposal was reviewed with the project leadership, the ECODeCK team observed that the palette appeared uniformly clean and saturated, and asked for a less expected, more sophisticated colour. In response, the cyan was desaturated to #50A8B1 (Table 3, Figure 4-b).

Yellow, red and violet follow the converging orientations closely: they are easily named hues of medium-to-high lightness (L 54–77) *and high chroma* (C 58–82). Cyan departs from this pattern with markedly lower chroma (C* 27). No key colour falls within the green hue range; yellow and cyan come closest to the ecological territory without occupying it. The four chromatic colours have no fixed hierarchy. The logotype and its descriptor rotate across pairs of key colours, while black and white act as neutral grounds and text colours.

4.5. Step 5 – Testing and applying the palette

Before scaling, the key palette was tested against the functional requirements in Table 1. Each key

Table 3
ECODeCK key colours (CIELAB values computed from sRGB, D65)

Colour	Hex	L*	C*	h°
Yellow	#FFAD08	76.8	81.7	76
Cyan	#50A8B1	64.1	26.9	208
Red	#E54B2C	53.9	76.7	41
Violet	#6C78DD	53.9	58.1	294
Black / White	#000000 / #FFFFFF	0 / 100	0	–

colour was shown with white and black text and on white, black and mid-grey grounds, and the logotype was shown in single-colour and two-colour versions on white and black (Figure 5). These tests were assessed visually for readability.

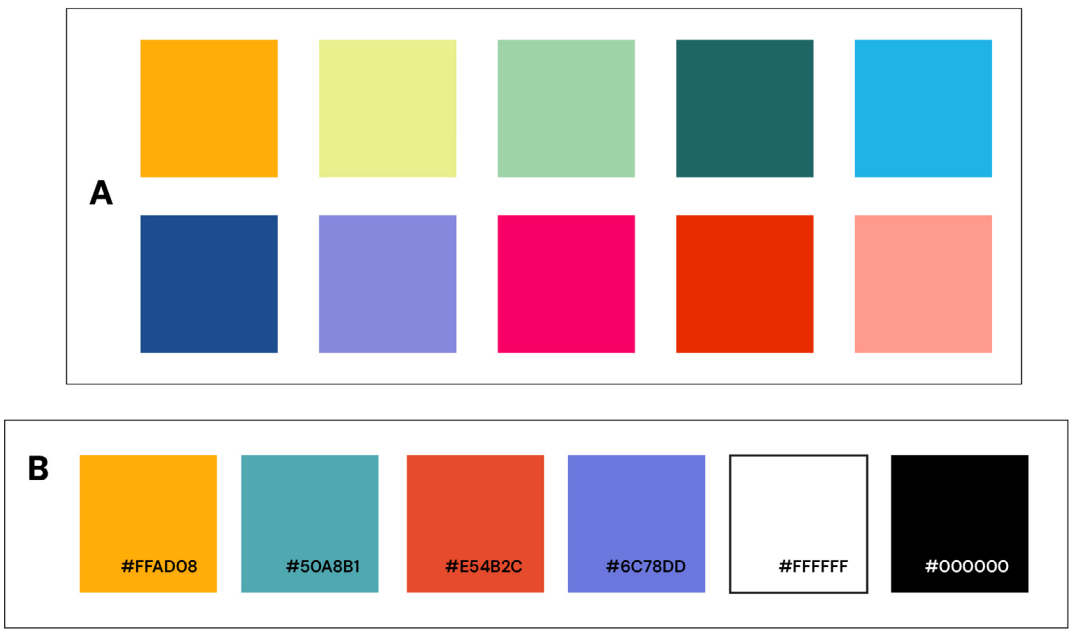
For this paper, a quantitative contrast check was carried out retrospectively using WCAG contrast ratios (W3C, 2023) (Table 4). It supports the main visual finding: all four key colours exceed the 4.5:1 threshold for text against black (5.37–11.23:1), and none reaches it against white (1.87–3.91:1). Black text on colour fields is therefore the functional anchor of the system. The check also exposes limits that visual assessment missed. Contrast between chromatic key colours is low throughout (1.41–2.09:1), and red and violet are isoluminant (1.00:1), so they cannot be told apart in greyscale reproduction and should not be used together to carry information. Methodologically, this suggests that Step 5 should combine visual assessment, which captures overall readability and character, with quantitative contrast verification, which detects isoluminance and sub-threshold text contrast.

4.6. Step 6 – Scaling the key palette into a chromatic system

The final step expands the key palette into a system able to support multiple applications. Here the visual information level takes over: circularity, transition, transformation, iteration and systemic thinking are expressed through three scaling operations.

Hue families. Each key colour was expanded into a colour family using Birren's (1961) colour triangle. Mixing each colour with white, black and grey produced its tints, shades and tones, giving pale, dark, muted and vivid variations of the same hue (Figure 6). The palette is thus structured as four families rather than four colours. Every chromatic colour in the system belongs to one of these families, which keeps applications coherent while extending the identity along the lightness and saturation dimensions.

Hue scales between key colours. Hue scales of thirteen colours were generated in Adobe Illustrator between adjacent key colours (yellow→cyan, cyan→violet, vio-



» **Figure 4:** *From CMM orientations to the ECODeCK key colour palette: (a) preliminary candidate colours palette resulting from the Colour Meaning Matrix analysis; (b) final ECODeCK key colours palette*

Table 4

WCAG contrast ratios between ECODeCK key colours

	Yellow	Cyan	Red	Violet	Black	White
Yellow	–	1.48	2.09	2.09	11.23	1.87
Cyan		–	1.41	1.41	7.58	2.77
Red			–	1.00	5.37	3.91
Violet				–	5.37	3.91

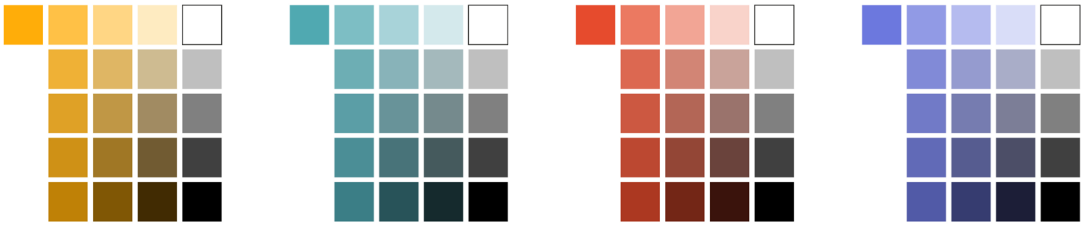
let→red, red→yellow). Two intermediate colours were selected from each scale at equal intervals, producing a twelve-step circular sequence anchored by the four key colours (Table 5, Figure 7). The sequence expresses circularity and transition, and it gives the system room to grow if the project's communication needs become more complex. Generated colours were treated as candidates rather than final values. Where a blend produced colours that were too dull or too close to a key colour, they were adjusted visually; for example, the colour between violet and red was lightened and shifted towards magenta to distinguish it from the red key colour. Such designer adjustments are essential to keep the colours distinguishable and the system harmonious. The yellow→cyan scale passes through a muted sage green: green enters the system as a transitional colour derived from two non-green key colours, not as an identity-defining hue.

Transparent overlays. Shapes in the key colours, derived from the logotype's morphology, are overlaid with transparency, producing intermediate colours where they intersect (Figure 8). These colours are mixed and hard to name, and they are not specified in advance. They therefore realise at system level the complex dimension that the key colours could carry only partially (Step 3). They also express transformation and systemic interdependence: the composite colours exist only through the relationship between key colours.

Taken together, the three operations show the distinction between a palette and a chromatic system. The meaning of the ECODeCK identity does not lie in four hues. It lies in their attribute configuration, their sequence, and the colours they generate in combination.



» **Figure 5:** *Visual readability tests of the key palette*



» **Figure 6:** *The four ECODeCK key hue families using the principles of Birren's triangle*

5. Application: developing the ecodeck colour identity

5.1. The chromatic system

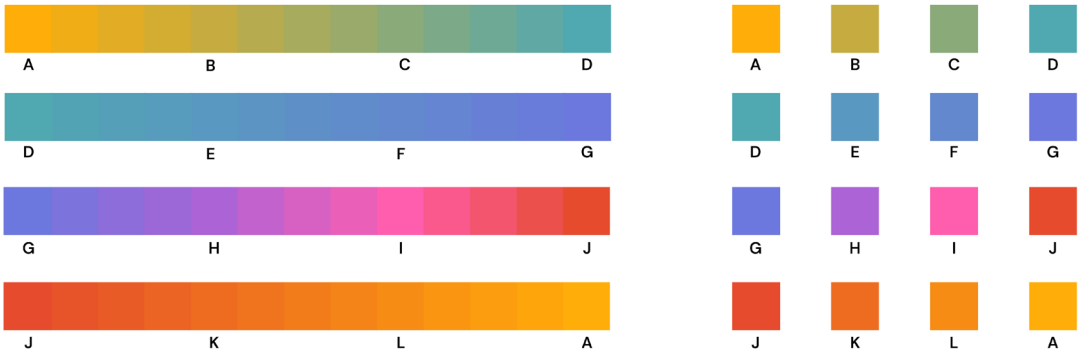
The resulting identity operates on three levels. The key palette of four chromatic colours with black and white carries the converging semantic dimensions – positive, strong and active – with the muted cyan introducing a measure of complexity. The four colour families extend each key colour across lightness and saturation for backgrounds, hierarchies and secondary elements. The twelve-step sequence and the overlay compositions carry circularity, transition and complexity at system level. Meaning is thus distributed rather than concentrated in a single colour or hue.

5.2. Applications

The identity was applied to the ECODeCK logotype in single-colour and two-colour versions on white, black, key-colour and tint grounds, and in overlay versions in which the logotype's ellipses are filled with transparent key colours (Figure 9). The complete colour system was then applied to multiple project resources and substrates, such as training materials, diagrams, reports, visual presentations, website (https://www.ecodeck.polimi.it/en/ecodeck-en/) and several graphic pieces, as shown in Figure 10.

5.3. Assessment against the project requirements

Read against Table 1, the identity meets the expressive side of the challenge. It differentiates ECODeCK from the eco-design convention: no key colour is green, and green appears only as a muted, transitional colour within the sequence. It also renders the project's view of sustainability as situated and systemic through the structure of the colour system rather than through a single symbolic hue. On the functional side, recognisability rests on the consistent use of four key colours in rotating pairs, and versatility on the four colour families. Legibility is robust where black text is set on colour fields, but weaker where chromatic colours are combined with each other or used as text on their own tints. These results are based on design analysis; the identity's reception by ECODeCK's audiences has not been tested.

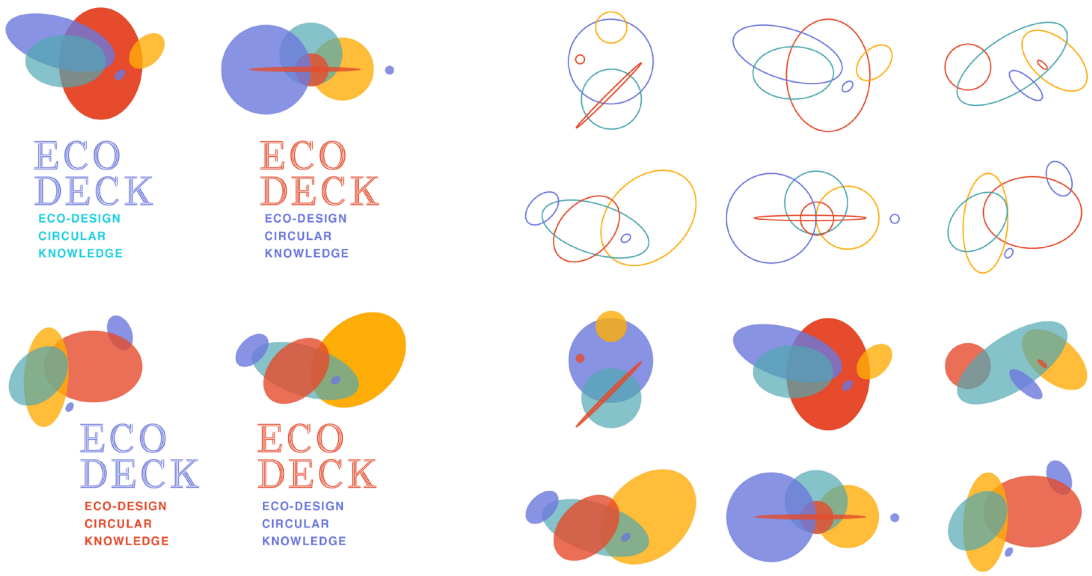


» **Figure 7:** *Hue scales between key colours and the resulting twelve-step circular sequence*

Table 5

ECODeCK twelve-step sequence (key colours in bold)

A #FFAD08	B #C5AB40	C #8AAA79	**D #50A8B1**
E #5998C0	F #6388CE	**G #6C78DD**	H #AC63D6
I #FF5EAE	**J #E54B2C**	K #EE6C20	L #F68C14



» **Figure 8:** *Transparent overlays generating mixed colours at system level*

6. Discussion

6.1. Structuring design judgement

The ECODeCK case shows where structured tools and design judgement meet. The tools generated candidates and exposed conflicts: the CMM showed the incompatibility between “complex” and the other poles, and the blends produced colours that were too dull or too close to the key colours. Judgement resolved these conflicts through the stakeholder-driven desaturation of cyan and through visual adjustments to the hue scales. What the methodology contributes is not the removal of subjectivity but its structuring. Every intervention can be described in terms of hue, lightness and saturation, so it can be justified, discussed and repeated in other projects.

6.2. Beyond hue at the scale of a system

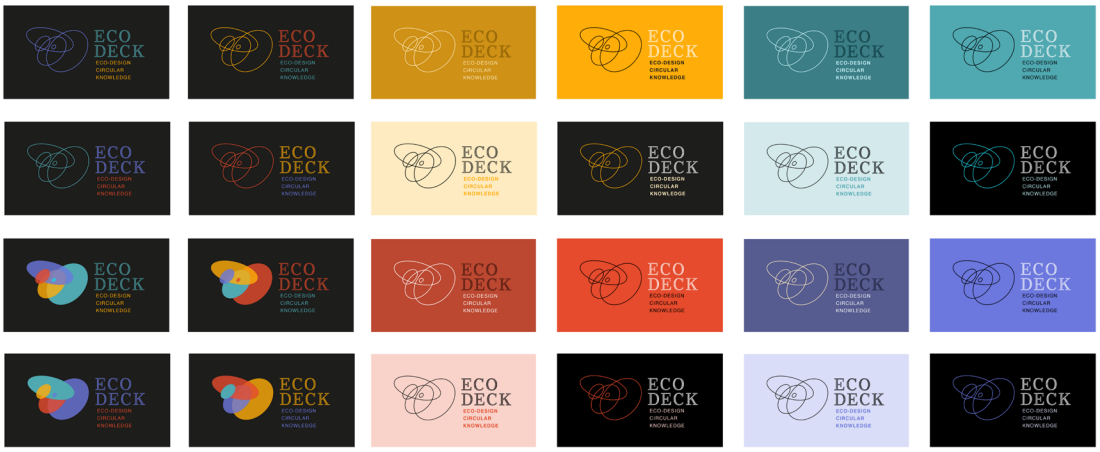
The CMM and similar tools treat colour meaning at the level of a palette. The ECODeCK case shows that when a project’s concepts call for incompatible attribute orientations, the conflict cannot be solved by choosing better colours; it has to be solved structurally, by weighting the semantic dimensions differently across the key palette and the extended system. This extends the beyond-hue approach from the selection of colours to the design of relationships between them, in line with Divers’ (2023) observation that designers work with colours in combination. It also qualifies the role of hue. The ECODeCK identity does not exclude any hue, including green; it changes the role a hue plays and the attributes with which it appears.

6.3. Colour design as research and knowledge dissemination

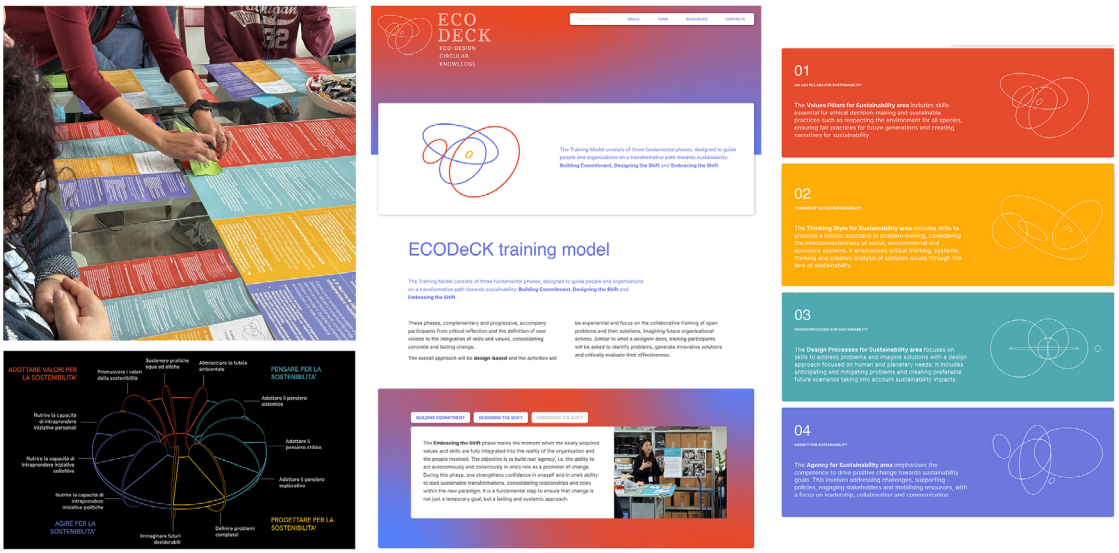
For a research project such as ECODeCK, the visual identity is part of how knowledge reaches its audiences. A project that frames sustainability as situated and evolving, and that seeks to shift established mindsets, gains coherence when its colour identity is developed through a process that is itself researched, documented and open to critique. In this sense, the methodology positions colour design as a research activity: its decisions are grounded in literature and benchmarking, made explicit through a shared vocabulary of colour attributes, and transferable to other projects. The identity communicates the project’s stance not only through what it shows but through how it was made.

6.4. Limitations

Several limitations qualify these findings. The methodology was formalised retrospectively from a single case, and its transferability to other sectors, scales and cultural contexts remains to be tested. The semantic profiles were assessed by the colour designer using the CMM protocol rather than measured with audiences. The benchmark relied on Google image searches, which provide a snapshot rather than a representative sample. Readability was tested visually, with quantitative contrast verification added retrospectively, and the scaled system – families, sequence and overlays – was not tested in the same way; the dark shades of each family could serve as high-contrast text colours on their own tints, which would partly address the legibility issues identified in Step 5. Colour values were specified and analysed in sRGB, so print reproduction was not assessed. Finally, no reception study has evaluated whether ECODeCK’s audiences read the identity as intended.



» **Figure 9:** *The ECODeCK logotype across the chromatic system, on black, key-colour and family variations grounds*



» **Figure 10:** *Applications of the ECODeCK colour identity*

7. Conclusions

This paper has presented a six-step colour design methodology for visual identity and its application to the ECODeCK research project. The case shows that hue-based conventions, such as the green code of sustainability, constrain identity design when treated as fixed meanings, and that a multidimensional approach considering hue, lightness and saturation offers a more flexible and more precise basis for colour decisions. The methodology's main contribution lies in carrying the beyond-hue approach from palette selection to system design. Organising the process around a conceptual level and a visual information level, and distributing semantic dimensions across the key palette and the extended system, made it possible to reconcile meanings that no single palette could carry. At the same time, the case shows that structured tools support rather than replace the designer's judgement, and that stakeholder dialogue can play a decisive role in the process.

Future work should apply the methodology in other projects and sectors, integrate quantitative contrast verification across the whole chromatic system, and test with audiences how identities developed in this way are perceived. Such work would also strengthen the case for colour design as a research and knowledge-dissemination practice in its own right.

8. References

Adams, F.M. and Osgood, C.E. (1973) '*A cross-cultural study of the affective meanings of colour*', *Journal of Cross-Cultural Psychology*, 4(2), pp. 135–156.

Bertola, P., Bruno, C., D'Itria, E., Gramegna, S.M., Mattioli, F., Melazzini, M. and Pei, X. (2025) *Designing the Transition: Seven Design Perspectives to Build Capacities for People, Organisations and Ecosystems*. Milano: FrancoAngeli.

Birren, F. (1987) *Creative Color: A Dynamic Approach for Artists and Designers*. 2nd ed. New York: Reinhold.

Calvo Ivanovic, I. (2024) 'Colour Meaning Matrix: A tool for connecting concepts to hue, value and saturation'. In: Cherubini, F. and Siniscalco, A. (eds.) *Color and Colorimetry. Multidisciplinary Contributions*. Vol. XIX A. Milano: Gruppo del Colore – Associazione Italiana Colore, pp. 214–221. DOI: 10.23738/RCASB.011

Calvo Ivanovic, I. (2025) 'Associare il colore al significato: una guida pratica per i professionisti del design / Associating colour with meaning: a practical guide for design professionals', *Finiture Green*, 25, pp. 10–16.

CIE (2018) *CIE 15:2018 Colorimetry*. 4th ed. Vienna: International Commission on Illumination.

Davelaar, D. (2021) 'Transformation for sustainability: A deep leverage points approach', *Sustainability Science*, 16(3), pp. 727–747.

Divers, E. (2023) 'The compass and the map: colour meaning and the colour design process', *Journal of the International Colour Association*, 32, pp. 44–51.

Elliot, A.J. and Niesta, D. (2008) 'Romantic red: Red enhances men's attraction to women', *Journal of Personality and Social Psychology*, 95(5), pp. 1150–1164.

Gao, X. and Xin, J.H. (2006) 'Investigation of human's emotional responses on colors', *Color Research & Application*, 31(5), pp. 411–417.

Gaziulusoy, İ. and Erdoğan Öztekin, E. (2019) 'Design for sustainability transitions: Origins, attitudes and future directions', *Sustainability*, 11(13), 3601.

Jickling, B. and Wals, A.E.J. (2008) 'Globalization and environmental education: Looking beyond sustainable development', Journal of Curriculum Studies, 40(1), pp. 1–21. DOI: 10.1080/00220270701684667

Kobayashi, S. (1981) 'The aim and method of the color image scale', *Color Research & Application*, 6(2), pp. 93–107.

Mezirow, J. (2003) 'Transformative learning as discourse', *Journal of Transformative Education*, 1(1), pp. 58–63. DOI: 10.1177/1541344603252172

Osgood, C.E., Suci, G.J. and Tannenbaum, P.H. (1957) *The Measurement of Meaning*. Urbana: University of Illinois Press.

Palmer, S.E., Schloss, K.B., Xu, Z. and Prado-León, L.R. (2013) 'Music–color associations are mediated by emotion', *Proceedings of the National Academy of Sciences*, 110(22), pp. 8836–8841.

Pancer, E., McShane, L. and Noseworthy, T.J. (2017) 'Isolated environmental cues and product efficacy penalties: The color green and eco-labels', *Journal of Business Ethics*, 143(1), pp. 159–177. DOI: 10.1007/s10551-015-2764-4

Peiró, J.M., Martínez-Tur, V., Nagorny-Koring, N. and Auch, C. (2021) 'A framework of professional transferable competences for system innovation: Enabling leadership and agency for sustainable development', *Sustainability*, 13(4), 1737.

Rieckmann, M. (2012) 'Future-oriented higher education: Which key competencies should be fostered through university teaching and learning?', *Futures*, 44(2), pp. 127–135.

Solli, M. and Lenz, R. (2011) 'Color emotions for multi-colored images', *Color Research & Application*, 36(3), pp. 210–221.

Sterling, S. (2011) 'Transformative learning and sustainability: Sketching the conceptual ground', *Learning and Teaching in Higher Education*, 5, pp. 17–33.

Sundar, A. and Kellaris, J.J. (2017) 'How logo colors influence shoppers' judgments of retailer ethicality: The mediating role of perceived eco-friendliness', *Journal of Business Ethics*, 146(3), pp. 685–701. DOI: 10.1007/s10551-015-2918-4

Valdez, P. and Mehrabian, A. (1994) 'Effects of color on emotions', *Journal of Experimental Psychology: General*, 123(4), pp. 394–409.

W3C (2023) *Web Content Accessibility Guidelines (WCAG) (WCAG) 2.2.* World Wide Web Consortium.

Wiek, A., Withycombe, L. and Redman, C.L. (2011) 'Key competencies in sustainability: A reference framework for academic program development', *Sustainability Science*, 6(2), pp. 203–218.

Wright, B. and Rainwater, L. (1962) 'The meanings of color', *The Journal of General Psychology*, 67(1), pp. 89–99.



© 2026 Authors. Published by the University of Novi Sad, Faculty of Technical Sciences, Department of Graphic Engineering and Design. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license 4.0 Serbia (http://creativecommons.org/licenses/by/4.0/rs/).