



GREEN HUB TWENTE

**ANNUAL
REPORT 2021**
DEFRAGMENTING
SUSTAINABILITY
IN THE UT

**UNIVERSITY
OF TWENTE.** | Green
Hub
Twente

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ABBREVIATIONS

BMS	Behavior, Management, and Society
BTD	Biologische Tuinvereniging Drienerlo
CBL	Challenge Based Learning
CFM	Campus & Facility Management
CHEPS	Center for Higher Education Policy Studies
CSIP	Central Sustainability Intelligence Platform
FTE	Full-time equivalent
GH	Green Hub
GHT	Green Hub Twente
IEM	Industrial Engineering & Management
ITC	Institute for Geo-Information Science and Earth Observation
M-ECB	Master in Educatie en Communicatie in de Betawetenschappen
M-EEM	Master in Environment & Energy Management
PSTS	Philosophy of Science, Technology, and Society
S4S	ScaleUp4Sustainability
SEE-PROGRAMME	Sustainability, Energy & Environment Programme
SEG	Shaping Expert Group
TDMI	Transdisciplinary Master Insert Group
UT	University of Twente
UX/UI	User Experience & User Interface
X2C	Crossing2Communities

1. INTRODUCTION

1.1 OPENING STATEMENT

As we moved through 2021, I kept being asked what the Green Hub is for. I found myself consistently giving the same answer: we are here to connect and amplify the myriad of sustainability initiatives within the UTwente. Now I wonder how true this is. As I write this at the beginning of 2022, I am not entirely satisfied with this mission definition, nor with how this is coming across. Firstly, it does not quite do justice to the scale and scope of this monumental challenge. There are many innovative, impactful, and intelligent research programmes, educational offerings, and operational fixes here in the Twente community. So much so that we were overwhelmed with how to best organise and interpret this vast amount of information.

That being said, we do not see this as a bad thing. On the contrary, it is a credit to the professionals and students that work for the university, and the region's broader sustainability, that there is so much on offer. In my experience working with sustainability since I started as a student climate volunteer in Manchester in 2007, I witnessed organisations thrive and fail hard to meet their sustainability aspirations. Before my PhD, I asked myself if there was a pattern of behaviour, or shared traits, that effective transformations for sustainability possess. Now I have a better idea from witnessing teams and organisations doing this effectively in practice. I can see many of these qualities and patterns right here in Twente as green lights for systemic change.

In 2021, we were buffeted around responding to numerous calls for sustainability solutions, connections, and knowledge. Inundated with information and queries, we tried our best to meet these demands. However, at the year's end, we saw we were trying to do too much for too many with too few resources. We subsequently entered internal reflection mode and were informed by our closest stakeholders and advisors that we needed more focus. In addition, wider stakeholders wanted us to prioritise their needs, and we were met with the unenviable decision of choosing a priority group.

Reading my statement so far, you might think this is beginning to sound like a rather negative report on a challenging year, and you are right. I am not inclined to sugarcoat this as that won't get us anywhere. Given the stakes, we must reckon with our limitations and truly take account of how this year went. We had to put our tendrils out throughout the institution to get an impression properly, take a reading, and feel the pulse of the people and innovation happening at the UT to remediate planetary health. Given our goals at the start of the year, which went toward creating an overview of sustainability - helping various units and departments make an inventory - I think we have achieved this well, despite the adversity we have faced. Yet not without a cost to my team's wellbeing and turnover rate.

In my view, this well-meaning response would never meet the need to centralise sustainability information in a meaningful, accessible, and easy-to-navigate manner. We are spread far too thinly and need the community and organisation of UT to support us in achieving this monumental task. Therefore, we had to develop a way of consolidating all efforts and sharing what worked well in one place, with a requisite problem somewhere

else in the organisation. This is where the concept of our cornerstone project, the Central Sustainability Intelligence Platform, originated. Nonetheless, this project's success is not within our control as an embedded start-up sustainability office.

After the substantial work we put in throughout Autumn and Winter 2021 to evaluate both our impact and our place in the UT, we, therefore, reached a sobering conclusion:

In its current form, structure and organisation, Green Hub does not have the right place in the UT to perform the way we wish it could; to truly honour what is expected of it and the aspirations behind why it was founded. This may be sobering, but it is a truth that must be confronted if the UT is to seriously scale up its efforts to perform more in line with planetary boundaries – especially if it sincerely considers the Green Hub to be a central part of achieving this.

I trust that this report will conclusively show you why this is the case and prompt necessary reflection across the UT. It is not exhaustive and not a perfect account either; this would have led to a government-inquiry length report with reams of descriptions of the literally dozens of initiatives we facilitated in 2021. Instead, we aim to present a substantive set of highlighting activities material to our positive social and environmental impacts on and off-campus.

I genuinely believe there is fertile soil here in Enschede to cultivate, but that is precisely the challenge. Without the necessary work, the potential will remain frustratingly untapped (as in many universities, regardless of their visibility and PR campaigns). I trust that the UTwente can do this differently and has the bravery to step out of its comfort zone.

With warm regards, good health and strength, as ever,

Dr Alex Baker-Friesen

6 POINTS TO TAKE AWAY FROM OUR ACHIEVEMENTS IN 2021

1. WE ENGAGED WITH A SUBSTANTIAL PORTION OF THE UT'S SUSTAINABILITY COMMUNITY: To understand their needs, we mapped sustainability stakeholders and started to build a network for mutual exchange. This includes existing associations and student groups, but we also reached out to other actors to interest and advise them how to become more sustainable.

Ties were forged with SUsTain, the Student Union, and many other groups to align our interest and spread the idea and support for transformations for sustainability. By providing official guides and informal meetings, co-hosting events, and collecting input for improvement, a first network was established.



Student Union and Green Hub Twente forge partnership for community outreach on campus sustainability with tree planting in front of the Bastille, Autumn 2021

2. DESPITE CORONA, MANY EVENTS WERE PERMITTED TO TAKE PLACE:

- A. Sustainability Week 2021 continued the collaborations across educational institutions in Enschede with Saxion and ROC van Twente and was able to attract many visitors and interested parties to its social events, workshops, and presentations.
- B. Green Hub and DesignLab hosted the final conference of the **ScaleUp4Sustainability** (S4S) project, bringing students' knowledge into practice by developing new teaching modules in close collaboration with leading enterprises. Green Student Officers worked to research and deliver new concepts to integrate ecological thinking in business and education and green venturing more broadly.



Student Green Officers, Marlen Braun, Victor Weber, Juan Alvear Cardenas, Benny Jabold, and Ivona Glišić, chuffed after giving a scintillating workshop to dozens of Honours students, September 2021.

C. As part of the **Plenary Session for Honours Students** at the UT, four Student Green Officers and the Coordinator gave a coupled talk and workshop on *'The How of Systemic Change'*. Dozens of honours students enjoyed a lively workshop in Strong Sustainability and *'Systems Entrepreneurship'*, in which core nested models of sustainability were shared and student teams were pitted against each other to come up with innovative sustainability start-up solutions.

D. **Sustainability Series 2021** hosted a stream of events where we could offer low-barrier and interactive moments around different areas of sustainability in cooperation with DesignLab & SUsTain. These were exemplified by a Sustain Speed Dating Event, and the Mastermind Discussion Event exemplify a range of smaller community-exchange oriented social workshops offered by or partaken in by the Green Hub.

For more details on any of these events and more, see **Section 3.2**.

3. WE DEVELOPED THE GREEN HUB AS A PROFESSIONAL ORGANISATION AND A HUB FOR THE COMMUNITY, AND MOVED FORWARD TO FIND A SUITABLE PLACE WITHIN THE UT:

A. A **Green Social Space in the Bastille** was set up as an informal meeting place for students and staff, and our office.

It was used to exchange meetings within the team and with guests of the Green Hub. Further, it is equipped to serve as a coworking space for all associations using the Bastille, Green Hub officers, and our project partners,

B. The **internal structure of the Green Hub was reorganized and improved** to align with the capacity, community needs, and workflow.

This includes the merger of our previous five portfolios into three (*Operations & Consulting, Marketing, Community & Communications, Research and Education*) to ease coordination and better align with the tasks and project sizes and areas we assumed. Additionally, larger team sizes allow for easier distribution of work and smoother transition of officers. Additionally, the new 0.8 FTE role of the Project Portfolio Manager was introduced as a counterpart to the coordinator, effectively maintaining structure and operability of the Green Hub.

For a more detailed report, see **Section 3.2.2**.

4. THROUGH THE END OF 2021, AN INTENSE AND FRUITFUL EVALUATION PROCESS ASSESSED OUR CAPACITY, IMPACT, AND INFORMED THE WAY FORWARD INTO 2022.

By interviewing stakeholders, our advisory board, reassessing the project managers and GH teams' perspective, we identified the main challenges and areas of improvement, and shortcomings. We need to learn to appropriately assess the Green Hub's and its officers' capacity to engage projects, recognizing limits while prioritizing transformative change and impactful projects. This ties into a **greater need for coherence in our appearance to the community and the range of our activities**. A third challenge is general visibility, which we seek to improve with a return to in-person campus life. See **Section 3.2.1** for a more detailed evaluation, or if you want to provide further input, you are welcome to reach out to us.

5. WE FORWARDED SUSTAINABILITY PROJECTS, PUSHED THE ISSUE OF THE INTEGRATION SUSTAINABILITY INTO UT CURRICULA, AND RAISED THE VISIBILITY OF THE ISSUE IN FOCUSED CIRCLES.

A. A **new generation of Green Officers across three portfolios** engaged various projects, exchanges, and relationship across the UT.

While some projects featured singular events – such as the Sustainability Transformation Symposium of October – others drive institutional change. As such, the Research & Education portfolio developed, and tested challenge-based learning offers at the BMS faculty as a basis to develop applied sustainability lectures and modules. Meanwhile, the Operations portfolio focussed on analysing the UT waste streams to prepare and implement changes for better separation and recycling, and reduction of campus wastes.

For more detailed reports and the different projects and areas, see **Section 4.3**.



Green Hub Coordinator gives talk on the *'How of Systemic Change'* to Bachelors Honours Students at their Plenary Session in the Technohal, September 2021.

6. THE CENTRAL SUSTAINABILITY INTELLIGENCE PLATFORM DELIVERED ON THE 2021 SHORT TERM GOALS TO CREATE AND CULTIVATE CLUSTERS OF STUDENT TEAMS AND FACULTY GROUPS FOCUSED ON SUSTAINABILITY WORKING IN EDUCATION, RESEARCH, ENTREPRENEURSHIP, AND SOCIETY.

The **nascent Central Sustainability Intelligence Platform proceeded into MVP-mode** to include a green jobs platform for the UT and sustainability guides for associations.

This offers the first scalable and expandable offer for students and the community to meet, engage, and benefit via innovation and sustainability knowledge brokerage. Further plans focus on developing a comprehensive research database on sustainability-related projects, PhD opportunities, and thesis options. This project is pursued across portfolios, each collecting data, conceptualizing use-cases, and preparing more functions. One central uncertainty lies with the integration of the platform into the UT digital infrastructure vs. an independent website.

See **Section 4.2.6** for more detailed reporting on the CSIP project.

2. MISSION STATUS

GREEN HUB TWENTE IS THE CENTRAL POINT FOR SUSTAINABILITY KNOWLEDGE AND INITIATIVES AT THE UNIVERSITY OF TWENTE. FOUNDED IN AUGUST 2020, GREEN HUB TWENTE HAS GROWN SIGNIFICANTLY OVER THE PAST YEARS, STRIVING TO BECOME THE CENTRAL POINT WHERE ACTIONABLE KNOWLEDGE AND INITIATIVES ACROSS A HOLISTIC SPECTRUM OF SUSTAINABILITY MATTERS CONVERGE AND REINFORCE EACH OTHER. GREEN HUB TWENTE IS STUDENT-DRIVEN AND STAFF-SUPPORTED AND FOLLOWS THE INTERNATIONALLY RECOGNISED PRINCIPLES OF THE GREEN OFFICE MODEL.

VISION

It is the shared vision of the UT and Green Hub Twente that sustainability becomes the norm throughout the University landscape and culture.

VALUES

Green Hub Twente values a healthy, sustainable environment and aims for open and inclusive discussions on sustainability.

A DEBRIEF ON HOW WE WOVE OUR VALUES INTO OUR TEAM CULTURE

Former team members appreciated the open and inclusive team atmosphere and work environment. This honoured and validated the values we agreed to in 2020: open, inclusive, service-oriented, authentic, bold and empathetic. We can count this as a success; it also helped us endure this last year's challenges. We were able to lean on each other and, whenever possible, voiced our struggles to foster a new work environment where vulnerability was not a 'show of weakness' but perceived as a strength both institutionally and individually.

However, some stakeholders interviewed early in the year noted that Green Hub could be bolder in its activities and impact. We noted this down well.

MISSION

Green Hub Twente aims to build a broad sustainability network amongst the student body, the UT, companies, researchers, organisations, and the local community.

At Green Hub Twente, our mission is to upscale transformative initiatives by:

1. Weaving them together within the sustainability ecosystem we map and amplify.
2. Connecting and facilitating their onward journey with the relevant organisations, projects or programmes linked to their idea or initiative.
3. Helping to guide the work process forward with the participating partners so that the initiative's potential for impact at scale can best be realised.

IMPACT STATEMENT

The Green Hub aims to contribute to the UT's organisational transformation for sustainability in all academic and administrative functions. This is its core mission and guiding principle when training select students in a hands-on manner as future professionals capable of dealing with complex sustainability challenges in a range of work settings.

Its 'Hub' function is to be understood as the focal point for integrating sustainability into the university's research, education, governance, and community. This way, redundancies are to be removed from within the Universities' structure and work processes by establishing the Green Hub as the central office for collecting sustainability information, providing advice, and aiding decision-making across the UT ecosystem.

3. ORGANISATIONAL STRUCTURE & PROCESSES

DESIGNING OUR ORGANISATIONAL STRUCTURE AND PROCESSES TO BEST FULFIL OUR MISSION TOOK A SUBSTANTIAL AMOUNT OF OUR TIME AND ENERGY IN 2021. WE THINK THIS WAS WORTH THE INVESTMENT. BELOW YOU WILL FIND OUT WHY WE DID THIS AND HOW WE PROGRESSED.

3.1 CONTEXT & EVOLUTION

As 2020 blended into 2021, we felt it important to recap the background for our establishment. When the Green hub was established, it was driven by observable needs of the community that so far lacked a solution: Many efforts to forward sustainability on and around campus lacked the communication and network to find efficient solutions, while individual, disconnected actors struggled to implement change. Many students and members of the UT's staff expressed a lack of support and central space to approach for guidance. Further, relevant information, including research and education related to sustainability and campus sustainability management, were not actively shared and was hard to access. This led to a situation where many parties expressed a desire to become more sustainable but lacked the knowledge to do so. Neither was there a central place that could have connected all the willing institutions, staff, and students needing support and guidance to become more sustainable. As a result, many sustainability efforts were lost or happened in parallel without good communication. Staff and students missed a central point of contact to approach with their ideas. Sustainability efforts essentially happened in isolation.

In November 2019, the UT drafted its Shaping2030 strategy, in which it clearly stated that *'sustainability [should become] a precondition to everything we do'*. In parallel, the proposal to establish a *'central place to connect all UT's sustainability initiatives'* was formalised and approved by the turn of 2020. Accordingly,

the Green Hub Twente was founded to take on this responsibility. It was founded as a student-led, staff-supported office and re-imagined in 2021 as an interconnected central service point, the heart of sustainability at the UT, connecting people and initiatives. It set out to develop new goals, create plans and realise them, and monitor and report on the university's progress towards becoming a more sustainable institution.

In 2021, Green Hub, therefore, presented itself in the UT as the team of 'Change-Managers for Sustainability', consisting of the following functions:

- **Bottom-up organisational model**, powered by student ingenuity and sustainability transformation expertise
- **Supporting UT sustainability policy**, with the SEE-Programme, Shaping Expert Group (SEG) for Sustainability, and other student and staff initiatives
- **Cultivating an ecosystem of sustainability actors** to share ideas, resources, and connections.

Thus, it was envisioned that the Green Hub could systematically tackle sustainability issues on multiple levels within the UT organisation. In trying to realise these ambitious roles and goals, the Green Hub confronted a series of necessary organisational changes.

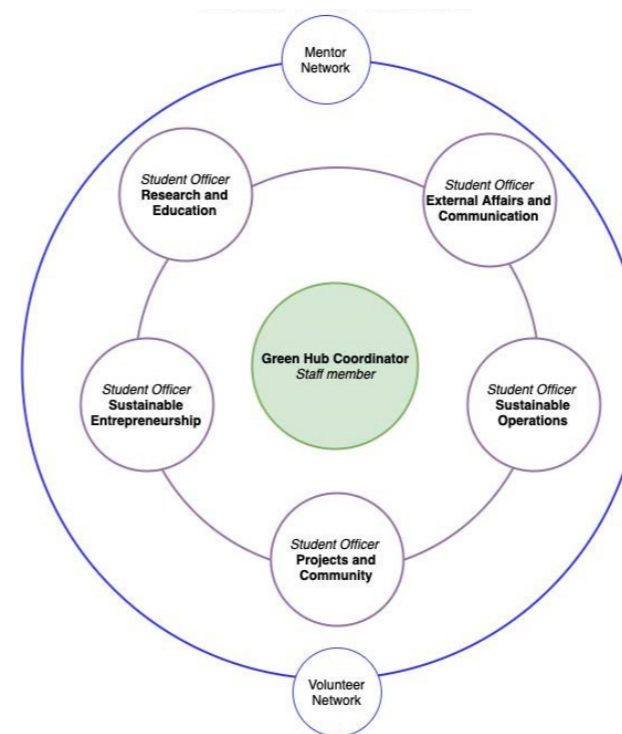
3.2 ORGANISATIONAL CHANGES IN 2021

Throughout its short history, Green Hub has progressed through deliberate stages of development modelled after the lean start-up approach.

The initial phase in 2019/2020 was marked by reflection on the original proposal and validating the assumptions and intentions for the Green Hub. Five portfolios and a support structure were initially set up to fulfil these aspirations. See Figure 1 on the left.

In phase 2, during 2021, a comprehensive round of assessments evaluated structure, processes, and impact in its first year of operations. In March 2021, a transdisciplinary Master Insert consulting project (*'Shaping Responsible Futures'*) provided insights and advice for making the Green Hub's approach more effective. To improve its contribution to sustainability - and its structures and processes - adaptations to the Green Hub governance were made.

The process was continued from September 2021, when a series of interviews with stakeholders, partners, and Green Hub officers informed an impact assessment and an internal evaluation process. This takes us to the next section.



Initial structure of Green Hub Twente

3.2.1 IMPACT AND PLACE IN THE UT

In 2021, Green Hub Twente tried to find its place in the UT organisation as an interconnected unit, working with the SEE-Programme in CFM. In 2021, it evaluated that structure against its mission to build a broad sustainability network. This led to the realisation that – while many of its activities concern on-campus life and operations – GH approaches a wide range of groups and issues outside of the SEE-Programme’s responsibility. As such, it aims to make sustainability a mandatory part of education at UT, independently engaging faculties and teaching staff. Additionally, it sought a more significant impact on the governance and management of sustainability at UT, advising and commenting on the policy and implementation level. Finally, on-campus – in the attempt to support SEE – it wished to achieve that sustainability (as a way of living and working) becomes a habit rather than a burden on campus.

Overall, it aimed to deepen its positive impact on and off-campus, including but not limited to campus facilities and maintenance. GH strove to become seamlessly integrated within the UT ecosystem: its faculties, departments, and satellites like the Kennispark while maintaining the mandate to innovate and foster sustainability.

Many of the GH activities already occur with partners, in front of audiences, and in coordination with UT policy bodies. Examples are the development of educational offers with the BMS faculty, a digital platform to share green job opportunities and guides to student associations, and Sustainability Week as a community event across the higher education sector in Enschede. Section 4. provides detailed overviews of all projects and portfolio activities.

These examples of GH activities backed up the mission to realise impact across the UT community beyond campus facilities. A realisation we used as a baseline to evaluate the most effective structure, place in the UT, and the resources needed to fulfil such a mission when the former Director of CFM assigned the Coordinator this task.

2021 IMPACT ASSESSMENT: FINDINGS AND CONCLUSIONS

The GH was asked to perform a strategic impact evaluation by the outgoing Director of CFM, Pim Fij, in September 2021. As a part of this, 17 interviews were conducted with a corresponding series of internal evaluation meetings with GH Officers, the coordinator, and the Board of Navigators (our advisory board). Here, we identified challenges to its mission and impact and asserted the strength and successes of the GH despite the challenging environment:

CHALLENGES

- The central challenges identified were **low visibility** throughout campus and among potential partners including some faculties and UT leadership. This lack of visibility contributes to relative uncertainty about the Green Hub’s purpose and goals, and by extension its activities, affecting the assessment of its impact, possibly biasing it negatively. The consequence must be that greater visibility, especially of the Green Hub’s successes and activities, should take priority for the coming academic year and when considering its placement within the UT.

- Tying in the challenge of visibility, the **impact the Green Hub had on the UT and campus life was perceived as low**, both in terms of tangible change, and in terms of involvement of the GH. Simply put, very few sustainability stakeholders were aware of the scope and diversity of GH activities and goals. Indeed, the dispersion of activities and broad range of goals was criticised as confusing (where its overarching theme was not considered) or stretched thin (where the breads of activity was generally acknowledged).
- Another challenge, likely motivated by the position of the GH as a subsidiary of CFM was organisational inertia, both when reaching out to actors across the UT, but also when confronted with administrative and HR challenges. It seemed problems we needed solving we left ‘hanging in the organisation somewhere’. While the former is due to low visibility and **its perception as a subbranch of CFM that is not concerned with e.g., education or research**, the latter is categorised by a **lack of clarity on procedure and status in human resources**. Hiring and pay scales of officers created a lot of inefficiency and took a substantial amount of the management’s time to resolve.

STRENGTHS

On the other end, the impact report highlighted the GH’s strengths as well:

- While its overall contribution was often underestimated, the individual interactions of each stakeholder – including joint projects, advice, and attended events – were often lauded and considered important. While this proves the merit of our activities, it also underlined the finding that most **interactions and recognition across campus resulted from the initial outreach after the establishment of the office and from ongoing cooperation rather than visibility and initiative to reach out to Green Hub**. It also suggests that added physical activity and a reinvigoration of campus life after nearly two years of online, reduced contact teaching and home office will naturally support the Green Hub’s efforts, internally and externally. Indeed, it was noted in our respondents how much traction our in-person interactions garnered with various stakeholders across UT.

MAIN LESSONS DRAWN FROM THE IMPACT EVALUATION

To further underscore the limitations to the Green Hub’s strengths and impact being realised, we conclude with the Main Lessons drawn from the Impact and Place Evaluation:

1. **Structural and organisational changes are recommended from the Executive, Strategy and Policy, and HR levels of the UT**, pertaining to the future place and organisational effectiveness of the Green Hub and its counterpart agencies.

Based on the impact assessment procedure, these changes should achieve three things:
2. Green Hub requires **operational independence** to decide on its primary operations’ scope and nature, considering its capacity to add new activities and define its mission and operational goals. This would particularly address the impression of dispersed and inconsistent action.

3. **Reduced affiliation** with UT administrative and policy enforcement has the potential to reduce resistance from other actors, particularly on the faculty level, as the Green Hub is rapidly growing into a knowledge and innovation unit for sustainability. The current structure, placement, and **HR dynamic** relating to hiring and managing our own staff are insufficient to meet our mission and goals. By retaining a formally independent position and focussing on substantial, independent cooperation with willing partners, more impactful activities can be prioritised to create positive examples.
4. Many participants appreciate the institutional environment and prestige of the more independent DesignLab and Novel-T. Therefore, orienting the GH after their successful model **might produce similar effects for sustainability efforts and could also ease access to new partners**.

IMPLICATIONS FOR THE GH’S PLACE AT THE UT

The impact assessment confronted us with seriously reflecting on the aims we had at the start of 2021 (outlined in **Section 2** above):

Whilst we are the navigators of UT’s transformation towards strong sustainability outcomes, we have learnt that we currently have neither the capacity, the established role, nor the power to lead and direct this transformation.

Ensuring that the Green Hub fulfils its role as the central point of contact for all matters regarding sustainability within the UT and its community requires adjustments. The following (summarised) core tasks ingrained in our mission outline this clearly:

- **Infusing sustainability into the academic and teaching missions across the various faculties and institutes of the UT (Research and Education portfolio) requires structured relationships and liaisons with each faculty.** It is questionable whether that will be possible while located within CFM, which have no direct connection to faculty boards and educational/ research activities, unless hiring a member of staff to meet the substantial demand of this expectation is seriously considered. Additionally, the perception as a facility management office impacts its capacity to be taken as a serious partner.
- **Consulting and liaising with the business and entrepreneurship community in and around UT (Operations & Consulting portfolio) suffers from a similar perception challenge.** Improving access to their communities justifies a formalised relationship with Novel-T/Incubase, including the added independence to “keep pace” with their more entrepreneurial approaches. Similarity by proximity could also increase GH standing among other UT communities. However, without a requisite willingness to collaborate from the existing entrepreneurial bodies of the UT, the Green Hub will continue to struggle to fulfil the expectations for ‘green business’ and ‘Sustainable Entrepreneurship’ on its own; *two student officers working 6-8 hours per week is not enough for this.*

- **Supporting the implementation and evaluation of the UT’s Sustainability Policy as part of the Shaping2030 programme and participation in the Shaping Expert Group for Sustainability requires a more formalised position vis-a-vis these decision-making bodies** – or a decoupling of the role of the Green Hub from these institutional strategy-level discussions so it can focus on innovation for sustainability. It remains unclear whether this can be done within a more coherent, integrated, and mandated office under CFM, allowing reliable, efficient connections to other parts of the UT. A more independent Green Hub placement could improve structural integration into the UT policy structures.
- **Green Hub acts as an essential means of support to the operational sustainability policy management in the SEE-programme and has contributed on multiple occasions to the improvements of sustainability management across campus.** While maintaining the connection to CFM is an operational priority, the ties to the department are likely to remain strong through continued cooperation. This does not necessarily require GH as a CFM subsidiary.

In the original Green Hub proposal of 2019, a recommendation was already made regarding the place in the UT structure. Some nuance has been lost here over time:

“To fulfil its mandate the Green Hub will require an independent position alike the Student Union in order to facilitate the collaboration with all partners. For budgetary reasons it is proposed to be hierarchically linked to the Campus & Facility Management as initially there will be a lot of collaboration and support from C&FM when addressing sustainability in operational management. As the Green Hub is independent, the hierarchical position is purely a relationship on paper.”

Considering these findings, it makes the most sense for us, practically and strategically, to start working closer to DesignLab. This includes holding a physical office strategically nestled among DesignLab, Novel-T, and where ITC is moving into, for example, on the northern flank of the Gallery. This also places us in a central hub of the community – opposite O&O square – emphasising the future role of sustainability as a core aspect of the campus and the community.

Starting in December 2021, Green Hub is seeking a dialogue with the management to discuss and fine-tune its recommendation to be placed formally in **General Affairs** – as sustainability needs to become a general precondition to everything we do in the UT organisation. This decision pursues the evolution from free-floating Green Hub to **more staff FTE, a less ambiguous mandate and autonomous financial and HR control**, and more institutionally backed access to UT policy structures and faculties. If these conditions are improved, the formal location as part of CFM or under General Affairs is secondary to the need for these functions to be ensured – assuming the UT truly sees the Green Hub as central to its claim to want to ‘make sustainability a precondition for everything it does’ and finally take the lead to actually being a sustainable university.

While this process dominated the latter third of 2021 - and will likely continue throughout 2022 - finding the suitable locations on campus and within the UT infrastructure is vital to the ambitious goal of becoming the central point of conversion for actionable knowledge and initiatives across a spectrum of sustainability matters.

Realising the vision of sustainability as a norm throughout the University of Twente landscape and culture requires change both in mindsets and in our institutions. The relocation – or reevaluation – of the Green Hubs position lends merit to establishing a broad sustainability network amongst the UT’s student body, companies, researchers, organisation, and the local community and making UT a leading sustainability university.

3.2.2 GREEN HUB INTERNAL STRUCTURE

OVERVIEW

Throughout 2021, the internal structure and positions within the GHT changed substantially. This marks the transition from an exploratory phase to sustained operations and tackling challenges met along the way.

Though the GHT emphasises flat hierarchies and an open and communicative work environment, it is a layered organisation. At its centre, the Green Hub Coordinator manages the team, communicates with key stakeholders within and beyond the UT, and strives to maintain a fruitful and productive working environment **while simultaneously advising the UT’s transformation for sustainability at the institutional level.** The student officers and supporting specialist officers are located at the second layer. The student officers work in dedicated portfolios representing sustainability efforts in different areas of the UT and its community. The supporting specialist officers provide the coordinator and the team with assistance and guidance in their area of expertise. Surrounding this structure is a loose mentor network occasionally providing advice and networking assistance to the coordinator and individual projects. Finally, a volunteer network to bolster the Green Officer’s efforts in assigned functions is envisioned but not yet realised.

Student Green Officers are considered as sustainability professionals in training from a wide range of backgrounds, levels of experience, and study levels. They apply and devel-

op their skills and competencies along with the challenges and projects they engage with, **preparing them for a job market across sectors defined by the systemic and intersectional nature of sustainability challenges and organisational transition.** Most current portfolio holders will continue to work for Green Hub Twente throughout the academic year 2022. Nonetheless, the team composition regularly changes while continuity is maintained through overlapping transition periods, knowledge transfer processes, and an open and communicative internal culture.

NEW PORTFOLIO STRUCTURE

One central change was the restructuring of Green Hub Twente from five portfolios (*Research & Education, Operational Sustainability, Projects & Community, External Affairs & Communication and Systems Entrepreneurship*) into three.

With the transition into a new team of student officers during summer 2021, the 2020/early 2021 set-up of the Green Hub was simplified, **increasing the number of officers per portfolio, reflecting on the importance of areas of activity, and enabling them to engage larger projects.** This allowed to reduce coordinative effort and thus save valuable time while maintaining and effectively sharing responsibilities.

The Systems Entrepreneurship Portfolio was fused with the Operations portfolio. This is now called Operations & Consulting. It acknowledges the applied nature of both fields and allows the shifting of efforts from company consulting and cooperation with the UT operations as needed. They merge the responsibilities of consulting and liaising with the business and entrepreneurship community in and around UT and everyday aspects of campus organisation and maintenance.

The portfolios of Projects & Community and External Affairs & Communications were fused to make one more extensive portfolio: Marketing, Community & Communications. It ensures that the Green Hub fulfils its role as the central point of contact for all matters to do with sustainability within the UT. This Portfolio Group strategically presents this knowledge to wider society and the UTwente Community at large.

The Research and Education portfolio was left intact and expanded, retaining the task to infuse sustainability into the academic and teaching missions across the various faculties and institutes of the UT.



Figure 2: Portfolio Functions and Merger: the details of the streamlining of the former five portfolios into the newer three, with entailed functions thereunder

PROJECT PORTFOLIO MANAGER

Given the explicit advice from the Transdisciplinary Master Insert report on Project Portfolio Management presented in 2021, a new position was installed:

Transdisciplinary Master Insert Report 2021:

“It is difficult for the Green Officers to link their day-to-day activities with Green Hub’s vision, mission, and goals. As a result, the Green Officers often have to invest time in organisational tasks, for instance, referring incoming email correspondence to the right portfolio or (re-)scheduling their own workweek based on requests from other parties. By being able to link day-to-day activities to Green Hub’s vision, mission, and goals, the Officers will be able to efficiently prioritise, sequence and execute their tasks and projects. This will significantly boost Green Hub’s effectiveness, as each Green Officer will work on what truly matters.”

The Project Portfolio Manager acts as a counterpart to the coordinator, effectively maintaining the structure and operability of the GHT whilst relieving the student officers from administrative tasks. These new positions’ responsibilities are as follows:

- Maintain an activity oversight and coordinate efforts where necessary
- Comprehensive project management & resource coordination
- Ensuring continuity in cooperation with the coordinator and departing officers
- Formally support staff in administrative matters
- Develop and maintain Mail management guidelines

The structures and work processes that undergird the Portfolio Project Management of the Green Hub is presented in Figure 3 as developed by the Transdisciplinary Master Insert Group.

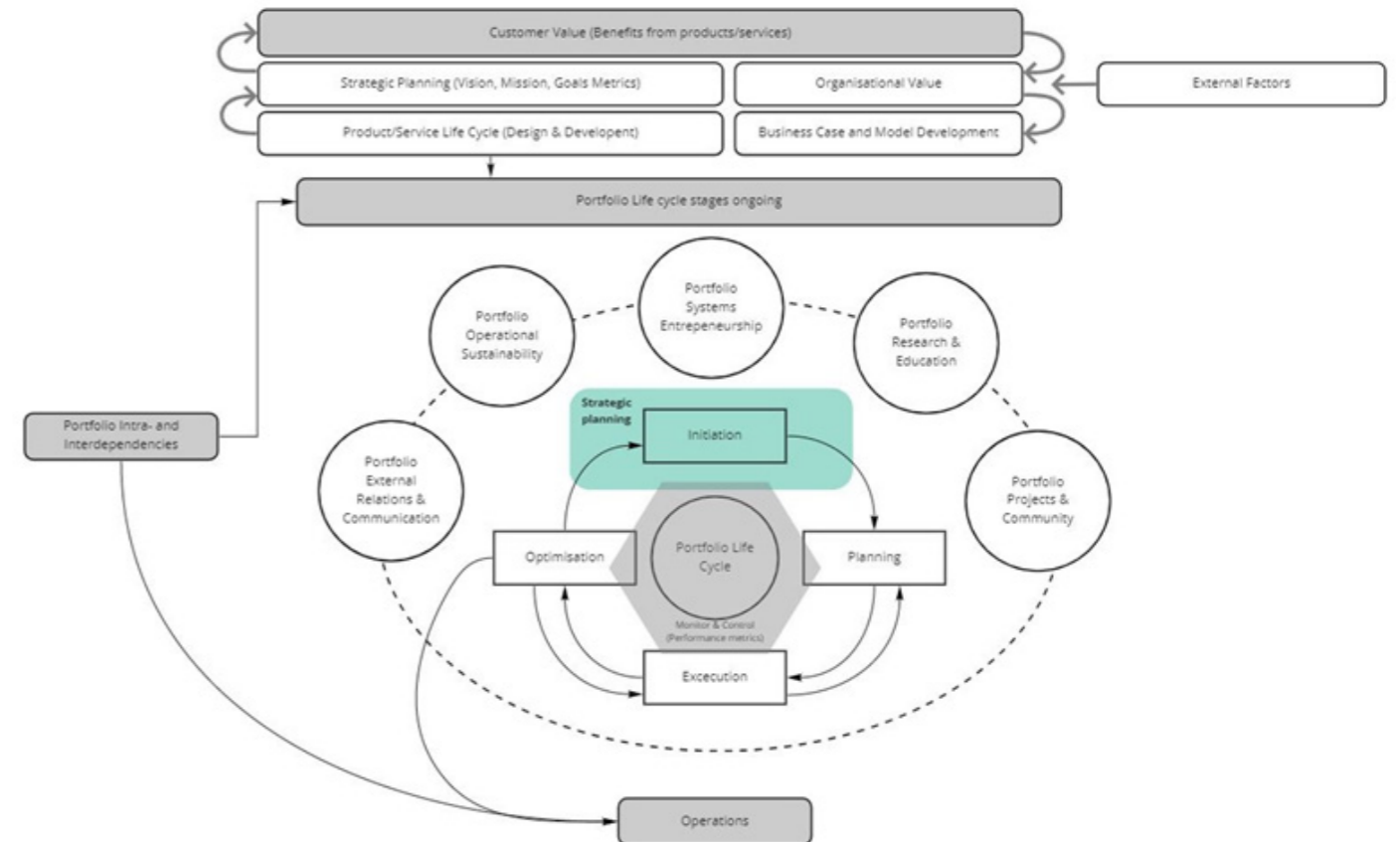


Figure 3: A Flowchart of the recommended Project Portfolio Management structure of the Green Hub from the TDMI report of Spring 2021

As the position is newly introduced, its role includes developing a lean operational workflow and sharing its responsibilities with the specialised support officers where needed. It is expected that this will spark an ongoing process leading to further structural changes on the separation of tasks and support team structure.

3.2.3 THE ONGOING CHALLENGE OF BUILDING AN ORGANISATION DURING A PANDEMIC

The ongoing Covid-19 pandemic continues to pose major challenges that affected every dimension of academic and campus life throughout 2021. For the Green Hub, in particular, it often prevented physical meetings, interfered with event plans, and reduced visibility on campus. Some regular events and important cornerstones to the academic calendar were cancelled, while others reached only a small audience or were reduced to online channels. From the Green Hub’s perspective, this reduced opportunities to connect with the student community.

Further, the new team rarely had the chance to connect with departing Green Hub officers, reducing a sense of continuation, limiting social interaction, and compromising the psycho-social wellbeing of the whole team. This was especially tough considering the already challenging demands of building a new organisation inside a big complex one and the monumental mission of the Green Hub. It further hindered the knowledge transaction between the two cohorts, complicating larger projects beyond the uncertainty of changing health regulations.

Nonetheless – and while it is uncertain when campus life will return to relative normalcy – the Impact and Place Evaluation indicated that added physical activity and a reinvigoration of campus life after nearly two years of online, reduced contact education and home office, will naturally support the Green Hub’s efforts, internally and externally.

4. PROJECT, PORTFOLIO & COMMUNITY ACTIVITIES 2021

4.1 OVERARCHING SUMMARY

This section of the report presents an overview of the most substantial projects the team was involved in delivering for the UT sustainability community in 2021. Whilst the projects highlighted are presented in detail, they are not exhaustive as the Green Hub was involved in many more projects to different degrees by dint of its role to connect and facilitate sustainability initiatives across campus. In the first part of the year, many of the initiatives and events listed in **Section 3.2** came under the responsibility of the former Projects and Community portfolio, as well as being managed in terms of communications and community for said events and initiatives by the former External Affairs and Communications portfolio. These initiatives all hinge around community development, and can therefore be categorised under the new merged portfolio activities of Marketing, Community and Communications (see a more focussed description in **Section 3.3.2**).

The Portfolio reports of the following main **Section 3.3** mainly focus on the Portfolio areas of Research and

Education on the one hand, and Operations and Consulting on the other, including focussed reports on the former Systems Entrepreneurship Portfolio (currently referred to under 'Consulting' in Operations and Consulting) and the central Specialised Support arm of the Green Hub.

The below selected projects, portfolio reports and community engagement initiatives present efforts where the Green Hub was more instrumental throughout the entire project lifecycle, where we were the primary 'innovation agents' of the project – e.g. the Central Sustainability Intelligence Platform -, or where our role was more pivotal to enabling an idea to reach project or implementation stage - as with our initial sponsoring, brainstorming and general support of the Hangar21 initiative.

4.2 EVENTS & COMMUNITY PROJECTS

The following section provides an overview of GH's projects and events

4.2.1 THE UT ECO-CHALLENGE

Early in the year, the Student Union, SEG Sustainability and the Green Hub teamed up for a high visibility-high engagement competition aimed at the student houses on the UT's campus.

The UT Eco Challenge – Student houses go green!

The overall objective of the event was to invite students to think about 'hacks' for sustainable living, that are cheap, easy to arrange and low-barrier of entry, especially since they often only live at their student house for a couple of years. As a result of this limited time span, and the stress of coursework, volunteering and part-time jobs (not to mention the Pandemic!), in most student houses, sustainability is not a top priority, since sustainable investments take time and financial resources. Hence the UT Eco Challenge.

The challenge provided an opportunity for student houses to make small investments that are beneficial on a short-term and long-term basis. Students were challenged to come up with creative ideas of how they could make their student house more sustainable. The top 6 winners of the challenge went home with prizes ranging from €200 to €1500, which they were encouraged, in follow-up engagements after the event, to use to make sustainable investments in their houses.



*Above: The UT Eco Challenge – Student houses go green!
Left: Student Union Board Member Eline Kikkert, and Green Hub Coordinator, Alex Baker-Friesen, getting their hands dirty with tree planting to signify our partnership on campus. October 2021.*

4.2.2 SUSTAINABILITY WEEK 2021

From the 11th-15th of October 2021 the third Sustainability Week took place under the cooperative supervision of ROC van Twente, Saxion University of Applied Sciences, and the University of Twente. While some events were mainly organised by only one of the three educational institutions, all offers were available to all students and employees. Although they affected the overall attendance, pandemic-related public health regulations allowed for physical events.

The events were offered by different hosts, focussing on sustainability in the areas of business and start-ups, consumption, art, personal development, clothing, food, and energy. They included interactive markets like discussion rounds, clothing and book swaps, or shared meals, but also educational offers and networking events. Overall, 42 events were offered.

This event marks the continuation of a successful format in 2020. Compared to its predecessor, the sustainability website was improved, as all events were made accessible in the language used by the hosts – either Dutch or English - and a new brand identity was successfully developed and applied to digital designs. Another novelty was the on-campus collaborations with COOP, Subway, and Starbucks, facilitated by the Campus Facility Management (CFM) department of the UT. The offers focused around vegetarian or vegan food were well-received and greatly extended the awareness of the event, with most partners open to similar cooperation in coming years.

Overall, and despite some drawbacks and the complicated and challenging circumstances of the Covid-19-pandemic, the third iteration of the Sustainability Week was a success. The Green Hub-led planning team coordinated between all involved actors and managed to learn from past events to overcome new challenges and set a foundation for coming iterations of the Sustainability Week.

A comprehensive evaluation report (**found on our website under 'Publications'**) details the improvements compared to the 2020 predecessor event and lays out plans for a continuation of the sustainability week.



An 'Innovatiemakelaar' at Novelt, gives a tailored workshop to green start-up enthusiasts as part of Sustainability Week 2021.



Above, the budding UT Sustainability Community gathers for Green Drinks during Sustainability Week: Vegan and Vegetarian Borrel included!

4.2.3 SUSTAINABILITY SERIES 2021

In 2021, together with DesignLab, SUstain, and Anete Veidemann from the CHEPS, the Green Hub organised a series of low-barrier events intended to create regular moments for its diverse members to interact in fun and creative ways, sharing and developing knowledge and ideas for the sustainability transformation. The target audience of the Sustainability Series 2021 was the UT community, students as well as staff.

Building on the Sustainability Series 2020, in 2021 it was agreed that the great challenges that we face regarding sustainability are made concrete and relatable for a wider audience, thus moving away from an abstract, academic debate. This was done by presenting clear examples from everyday life that invite the audience to participate and share their own views, opinions, and understandings, while simultaneously keeping activities fun, engaging, and accessible. The audience should develop a sense that they have learned something, as well as the sense that they can take action to change something for themselves.

Due to the pandemic, most of the events – especially before the summer – took place online. Due to reduced attention spans in online environments, the use of digital tools and online resources was explored to help with this, e.g., breakout rooms, a quiz/polling tool such as Kahoot or an online conferencing/walkaround environment. Since digital events are still quite novel and there is not yet an established method of doing things, different tools and formats throughout the series were explored to find out what works.

Overall, the tone of our events was aimed to be light-hearted and accessible. This should not detract from the content and the informative function of the events, however. Our objective was to present difficult yet interesting information in a fun and relatable way. Within this aim, there was still space to have events that put more emphasis on the fun side, such as a pub quiz, and events that put more emphasis on the informative side, such as a panel discussion.

4.2.4 UNIVERSITY OF TWENTE SUSTAINABILITY TRANSFORMATION SYMPOSIUM

Cooperatively organised by the [Green Hub Twente](#), [Shaping Expert Group for Sustainability](#) and the [Student union](#), the Sustainability Transformation Symposium featured keynotes from relevant specialists in applying sustainability and transformation management to the university, as well as lectures and workshops given by experts, student teams and management across disciplines. On the 7th of October 2021, this event contributed to the representation of the whole spectrum of initiatives and innovations on sustainability in and around the UT. It showcased their different approaches, focus areas, and goals to build the foundation to weave together a coherent whole-UT signature approach to Sustainability Transformation.

With a combination of Keynotes, short talks and workshops, it aimed to answer some key questions:

- What is our collective vision of the University of Twente as a sustainable, circular, and resilient university in 2030 and beyond?
- How can our community of researchers, teachers, support staff and students transform our organisation so that our university can maximise its positive social and environmental impact?

Further, attendees were actively participating and involved in networking.

Despite organisational complications in a turbulent year at the Green Hub and changing public health regulations, a well-received event could be hosted. The main shortcoming of the event – low number of visitors – was reflected on in the evaluation phase of the project and contributed to a mixture of turbulent planning and the priority of content over publicity. Planning for the second symposium draws from the experiences and lessons learned during 2021.

4.2.5 HANGAR 21: AN INNOVATION WORK-AND-PLAY SPOT

Hangar21 is a newly founded tech workshop-and-play space for children aged six to 18. Having organised the 2019 edition of Kids4Twente, Saxion and Hangar21 chose plastics as the central theme for the next edition. At the same time, they expressed the ambition to build a large-scale plastic recycling workshop in Twente airport's Hangar 21, to be used for and by (science & technology) education. An overarching plan for a circular ecosystem was presented, starting with a physical pilot/demonstration environment where young and old, practice and science, education and business, come together in community in action. Due to the Covid-19 Lock-down, the realisation of the initiative is continued into 2022.

Hangar 21 is launching with two concrete projects around the raw materials Plastics and Cardboard.

During Project phase 1 (Plastics), basic infrastructure for Plastic recycling will be acquired and used to provide an educational and hands-on workshop with machines which can recycle plastic waste into new basic material, including plates and 3D print filaments.

To continue and deepen this workshop, a later stage can

introduce the assembly and further development of other relevant starter kits in collaboration with the Twente manufacturing industry.

The 2nd project phase focusses around a Cardboard bicycle project for the Municipality of Enschede, in conjunction with the National Bicycle Congress in Enschede. It will create a stepping-stone for technology education and wider awareness of social issues by allowing pupils/students to make their own bicycles from surplus cardboard - and by using the unique opportunity of the congress in June 2022 to give this project idea a significant publicity boost. The basic idea is based on inspirational previous initiatives elsewhere in the world (https://en.wikipedia.org/wiki/Cardboard_bicycle).

By participating in the Hangar21 initiative, the Green Hub Twente not only commits to the cause of local sustainability and the circular economy, but also to the idea of nurturing local initiatives for a sustainable future, and the goal of a university rooted in its community. This pledge is cemented by a financial contribution in five annual instalments of €2000 per year. We hope our modest contribution from a smaller organisation within the UT can inspire larger organisations with more resources to invest in the initiatives housed by Hangar21. Currently, the main financier remains Twente Milieu.

As a partner and contributor to Hangar21, the Green Hub can use its experience and resources to translate the lessons and ideas from this communal space into tangible strategies for waste management for its own partners. The central goal is to co-create an 'education chain' for sustainability and produce innovative and creative outcomes together with pupils, businesses, and educational organisations. By emphasising education as the centre of the project, the Green Hub can facilitate stakeholders from the private sector, the University, and the community to exchange knowledge and build lasting structures to educate young people about local circular economies.

Further, the Green Hub can organise projects within Hangar21's facilities, connecting its own network and student initiatives with this new creative space, learning from and adding to the knowledge exchanged.

4.2.6 THE CENTRAL SUSTAINABILITY INTELLIGENCE PLATFORM

The Central Sustainability Intelligence Platform (CSIP) is our cornerstone project that will run for several more years, and will establish our main objective in a **smart, cultivated digital environment**: to be a knowledge hub for sustainability intelligence, serving the UT and its wider regional context.

Sharing knowledge and connecting actors around the issue of sustainability is central to the mission and role of the Green Hub UTwente. The design of the CSIP to supplement the existing digital infrastructure of the UT is expected to meet the expressed stakeholder demand for transparent and accessible information regarding sustainability related projects, activities, and actors within the UT ecosystem, in one centralised location to increase connection and collaboration. By building a user-friendly platform to access data, and making use of data visualisations to present sustainability related information in one central place, the Green Hub will allow current and former students to search

for challenge-based learning projects and sustainability related job opportunities, enable researchers to learn about the work of their colleagues in other fields to facilitate transdisciplinary research projects, and provide transparent insights into UT sustainability policy goals and show the progress that is being made.

As a long-term project representing significant resources and time, the workload is spread across all portfolios, either for functional aspects of the platform, or for its communication and presentation to the UT and Twente communities.

Due to the modular service design approach envisioned, a first MVP module was needed to test user needs and the interface design itself. Thus, CSIP began in earnest with a simple Green Jobs Portal embedded into the existing UT WebHare digital infrastructure, using our own website as an initial host. In 2021, this first module was published on the Green Hub website (<https://www.utwente.nl/en/sustainability/green-hub-twente/green-jobs/>): **The Green Jobs Portal** presents green job opportunities, internships, and thesis assignments available at the UT, as well as information on UT teams and associations with a focus on sustainability. It also covers sustainability jobs outside of UT in the External Green Jobs Board. For both sections, job offers, research opportunities, and student associations can be advertised to all those interested in sustainability during their time at the university. This proof of concept marks an important milestone for the CSIP and adds a valuable offer to UT students.

Furthermore, significant progress has been made to other modules/applications of the platform. The preparation of a sustainable research database and sustainability guides for student associations have progressed, as will be discussed in detail in the portfolio report section below.

The Central Sustainability Intelligence Platform delivers on the 2021 short term goals to create and cultivate clusters of student teams and faculty groups focused on sustainability working in education, research, entrepreneurship, and society. It also aims to facilitate a network of external organisations on sustainability-related topics incl. water, energy, waste, and social change in Twente.

Below the timeline of the CSIP project realisation: 2021-2023 is shown in figure 4.

4.3 PORTFOLIO REPORTS

The following section provides an overview of the portfolios and their achievements in 2021.

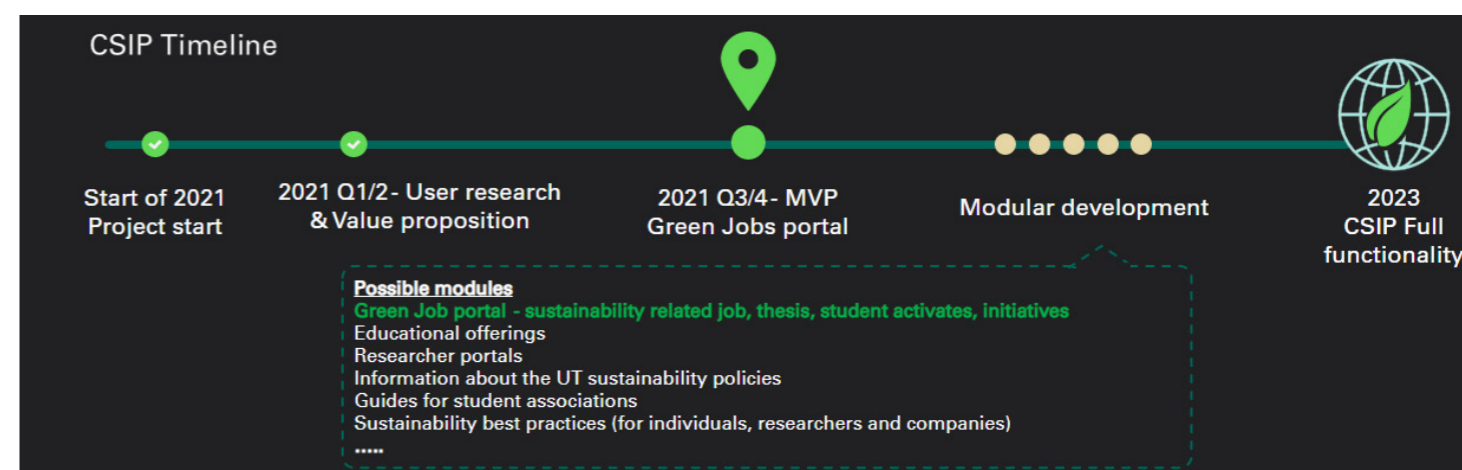
4.3.1 RESEARCH & EDUCATION Education for Sustainability

Green Hub Twente wants to embed sustainability in education. However, Bachelor's and Master's curricula at the UT are well-defined with little or no elective space. On the other hand, sustainability-focused, or related education at UT is lower than the demand by the students.

This portfolio is continuously reaching out to professors, programmes, and faculties to infuse sustainability into the UT's many educational offers. First, this is represented by ongoing inquiry into of the status of inclusion of sustainability in the education across the UT's courses, programmes, and faculties, and their needs and reservations to include it. At the same time, the inclusion of sustainability education is proposed and encouraged in bilateral communication with different partners. While often aimed at promoting the issue, concrete options for the design of lectures, challenges, or other educational modes are offered.

The BMS faculty was selected as the starting point to systematically include sustainability into the educational programs of the UTwente All program coordinators of the BMS faculty were contacted by email. Unfortunately, the response rate was low. The program coordinators and directors of four programs were met with: IEM, PSTS, M-ECB/M-EEM/M-LMM, and M-EEM. As follow ups, the teachers of the IEM and M-ECB/M-EEM/M-LMM were also met. During these meetings, GHT was introduced, the current state of sustainability education within these programs, and possibilities to include more sustainability education (paired with CBL) in the programs was discussed. Agreements were made for future collaborations. Follow ups for the other programs within the BMS faculties are planned for 2022.

Figure 4: CSIP Project Realisation Timeline: 2021-2023



A Definition of Sustainability for the University of Twente

In its 2030 vision, the UT decided and openly communicated that “sustainability is a guiding principle in everything we do”. Yet, the UT does not have an official operational definition or coherent concept of Sustainability. Consequently, neither was the Green Hub able to adopt a concept of sustainability at its foundation. This is understandable, as it is a complex, multifarious and contested concept with numerous definitions. In order to aptly represent the multifaceted concept, working through existing academic and operational definitions is necessary to compose our own guiding concept of sustainability. This is particularly important, as it must be fathomable and applicable to the diverse context the Green Hub operates in to be presentable to stakeholders and the UT community. A development of a scientific, meaningful, and ethical definition of sustainability should be shared or at least agreeable by all actors to ensure a common goal.

Consequently, this portfolio began a comprehensive literature analysis, considering scientific definitions of sustainability with different scopes and foci. These will be combined into a proposal for a shared definition of sustainability by the Green Hub in 2022. In a next step, it will be presented to the board and potentially wider community of the UT. Based on the working definition of sustainability, there is also an ongoing effort to include sustainability as a criterion for the program evaluation at the UT. A follow-up meeting with the chairperson of the UTpK, the UT platform for quality assurance matters on education are planned for 2022.

Sustainability Research Database

Contributing to the progress made with the CSIP, the Research and Education portfolio prepared the design of a sustainable research database. So far, the UT has only one common research data platform with 120 research groups and over 100.000 research projects, but with no appropriate filters and structure to navigate it. Of special concern to the Green Hub, no filters relate to sustainability, making it impossible for fellow researchers or students to pursue research and interests linked to sustainability across faculties. In addition, the UT is connected to various research portals like PURE, yet those are only accessible to select people and not transparently reflecting the UT’s full portfolio.

This shortcoming motivates the design of a distinct database for sustainability research at the UT, and its facilitation through the CSIP. Designed to address the needs of PhD students, Guest researchers, Research staff, and larger research projects, this platform will enable easier access to research documents, research groups, and active experts across the UT, enabling and depicting an intersectional knowledge-network focussed on sustainability.

At the time of writing, the portfolio discussed different options for the design and capabilities of the sustainable research database and scheduled interviews with research staff to document the expectations, needs and perspectives of researchers. Based on their input, the platform will be developed with a focus on particular faculties and research areas. Without selecting a common area, it will be difficult to structure and would further complicate technical development.

Extending the CSIP for a database of specifically sustainability-related research will contribute to and coordinate the UT’s profile towards sustainability research (See modular approach for **CSIP Timeline, Section 4.2.6**). It will improve accessibility of research data and contacts, and enable internal networking of research groups, overlapping research interests, and can serve as a guideline to improve the general research data platforms of the UT.

Strategic Institute Relations and Partnerships

As part of their projects and in ongoing communications, the portfolio is maintaining relations with institutes of interest to the Green Hub’s mission. If no overlap occurs, these meetings are scheduled monthly, and serve the development of partnership and mutual exchange. Currently, the most active exchange is held between the Green Hub and the Centre of Energy Innovation of the UT, where each activity is discussed to determine potential areas of cooperation or mutual support. As the goals and focus areas are overlapping significantly, the ongoing exchange additionally provides an example on how to attempt regular contact with sustainability stakeholders from the UT.

Green Hub Course Development: ‘Crossing2Communities’ Course Development

In Cooperation with CHEPS (Center for Higher Education Policy Studies), the Green Hub developed a challenge-based educational offer focussing on teaching students how to work side-by-side with vulnerable communities to help them alleviate sustainability challenges in the Twente region.

Crossing to Communities (X2C) aims to develop student-led exploration and diagnosis of local sustainability challenges together with affected communities. During 2021, two main goals were pursued:

1. Content development
2. Finding a location for the educational elements in UT/BMS curricula.

Together, the programme was ambitiously estimated to be piloted in the academic year 2021/22.

Regarding **(1) content development**, a syllabus was drafted that was specific enough to use in negotiations with partners, yet flexible enough to allow for applications in different educational and institutional contexts. It includes a one-pager for distribution to interested parties across the UT.

The core course on **sustainability challenges** (5 ECTS) focusses on introducing the climate- and biodiversity crises and the conceptual and political tools needed to understand and address them. Additionally, the team worked on singling out some key sustainability challenges that students could work on more autonomously in the remainder of the honours programme (10 ECTS). During the first conceptualisation of challenges, the overarching theme was the post-covid recovery of vulnerable groups in the Twente region. However, the focus shifted in the meantime, as it is complicated to draft challenges around ongoing and shifting crises, and to reduce emotional stress and pressure from dealing with Covid in education on top of its influence on everyday private life. Consequently, new sustainability challenges address problems such as energy poverty and fast fashion, to flag two of them. To formalise this educational plan into a real challenge-based learning module, a format was eventually developed to translate broad descriptions of wicked sustainability problems into regional challenges for interdisciplinary groups of students to explore and address.

The result is an elaborate course manual, including both general principles of challenge-based learning and learning for sustainability, integrated seminars and lectures, several well-developed sustainability challenges, and methodological tools to address them.

(2) finding a location for the educational elements in UT/BMS curricula proved challenging. Initially, the option to establish a new minor at the UT was explored. It was quickly abandoned, however, as this would make X2C a competitor for many existing minors, complicating its introduction into existing curricula.

A more promising venue was considered to develop X2C in the framework of UT’s honours education. It is a very valuable added experience for interdisciplinary groups to address sustainability problems and to work with a community, or hard-to-reach demographic. To increase the impact and apply the module to a more diverse audience, undergraduate (bachelor) education was preferred in this planning phase.

Currently, no final location for the offer of X2C has been found, although some sustainability challenges where success included in the existing honours programme. Our long-term goal is to remain flexible and offer multiple pathways to access such education. Hence, we propose to offer this program, first, as an honours program, but later explore opportunities to develop a summer course (2022) or, a stand-alone minor in 2023/24.

Challenge-Based Learning – Green Hub as a (Sustainability) Challenge Broker

Education for the sustainability transformation & Bachelors honours challenge

The world we live in is rapidly changing. People speculate about the impact of new technologies on our societies. At the same time, the climate is rapidly heating up. The new IPCC report projects highly increased climate change in all regions around the world. The world’s work force needs reskilling. Traditional knowledge transfer is not sufficient to cope with these highly complex and interdisciplinary problems. Students must learn how to think about, and how to help to shape a resilient, responsible, and sustainable future.

Challenge based learning (CBL) offers a framework that enables students to learn effectively in an applied, impact-focussed manner. In challenge-based learning students learn by investigating the topic, setting the guiding questions that need to be answered, and going out into the world and search for the answers. In this process, students work in interdisciplinary and international teams, meet a variety of stakeholders, and learn to cope with stress, unanswered questions, and even failure. This equips them not only with factual knowledge, but the professional skills to apply academic knowledge to real-world challenges.

In cooperation with the honours program, the Green Hub has developed elective CBL-courses for students interested in sustainability. The first of these challenges focussed on the recycling behaviour of university communities. Students were invited to investigate questions around the recycling behaviour of students from different backgrounds, the technical innovations, and their implication for implementing a circular economy, behavioural, psychological, and epistemological aspects of recy-

cling behaviour or on-the-ground investigation of the waste system within the student community. By interviewing students and policy writers, by finding the best practices of other universities, or combined methodological approaches, the challenge sought to produce valuable answers that can be applied at the UT. The challenge requires insights from behavioural science and technological innovation in equal (interdisciplinary) measures, and asked for help to establish a foundation for persuasive and sustainable behaviour change.

The second challenge presented students of the honours program with the energy infrastructure of the UT Campus. They were to find ways to implement to embed the new generation of renewable energy into the Campus energy grid. Considering the range from study and living units, but also bars, cafes, sports tracks and fields, laboratories, and workshops – and their diverse energy needs – participants engaged questions about barriers to energy transition, different phases and the order of facilities to rely on renewable energy, or the potential of energy generation of on campus. This challenge was designed to connect data-based approaches and connect them with network and stakeholder analysis, drawing from knowledge exchange with the Green Hub, UT start-ups, and the university administration.

Finally, the Green Hub Team facilitated the first plenary session in the academic year 2021-2022 of the Honours BSc program. Two lectures were offered, where Green Hub coordinator Alex Baker-Friesen and the Green Hub officers Ivona Glišić, Marlen Braun, Victor Weber, Juan Alvear Cardenas, and Benny Jabold covered sustainability, transformation, and entrepreneurship.

These courses – having reached a wide array of students from different tracks of the honours programme – will serve as a starting point and blueprint in changing traditional to green education. Additionally, the conceptualisation of a new program focused on regional sustainability transformation is under way.

STUDENT TRACKS IMPACTED

Total students impacted - 95

Entrepreneurship & Business Development track – 27
Mathematics track – 21
Philosophy track – 16
Processes of Change track – 17
Shaping the Future track – 14

4.3.2 MARKETING & COMMUNICATIONS

Supporting Larger Projects

See Section 3.2 above

As the only portfolio not directly concerned with an operational area of the university, the Marketing Portfolio is engaged in both the support of larger projects by increasing their outreach, visibility across campus and the community, and with the promotion of the Green Hub Twente vis-a-vis that community. Its activities in 2021 can therefore be better presented via the realisation of the community projects and events listed in Section 3.2.

Visibility Strategy

To fulfil its role as a sustainability knowledge hub and networking organisation, the Green Hub needs to be visible for (potential) partners and audience. Next to ongoing bi- and multilateral cooperation with different actors, a sound and targeted visibility is needed. Building on the experience of almost two years of activity and many larger projects in 2021, the Marketing portfolio began developing such a strategy. This entails the identification of core and peripheral target groups, and the mapping of different channels for outreach and visibility, and the evaluation of offline vs. offline channels of communication. These evaluations consider both effectiveness and efficiency and will result in a strategic visibility plan to accompany the Green Hub's other activities.

On central weak point was identified in the positioning of the Green Hub in common search engines, the remedy to which is an improvement of the website to better align with common searching terms. The website was updated to remedy this.

Considering the ongoing prevalence of remote learning and its impact on campus life, the visibility strategy is particularly laying out plans to host physical events and become integral to recurrent official UT-events (Business days, Kick-in, Batavierenrace etc.).

UT Sustainability Newsletter

The Sustainability Newsletter is published by GHT since December 2020. It informs the UT community about sustainability-related topics at the UT. Every month, it contains new articles and information around sustainability at the UT, Green Hub activities, and interesting news.

In each Newsletter, different categories guide the reader through relevant and engaging topics. The category "Sustainability News" provides the reader with a collection of brief updates about new initiatives, projects, or events on campus. The category "Drum Rolls for..." presents sustainability stakeholders at the UT, answering questions about their work and future visions. The other topics are rotating and depend on what is currently of topical interest.

With regards to visibility and impact (See Impact and Place Evaluation report 2021) the newsletter was widely known and often referred to as the primary source of information on the Green Hub – aside from personal involvement. At the same time, most stakeholders interviewed expressed a lack of interest in additional or more extensive newsletters.

The Community Garden

Collaboration with SUSTAIN

The former Projects and Community Portfolio established and maintained a collaboration with the other main student sustainability association on campus at UT: SUSTAIN. In 2021, there was a lot of collaboration with SUSTAIN, especially on the Community Garden Project and the Sustainability Series.

The project consists of a group of students/staff that together learn the basics of gardening/producing food using square meter garden boxes. It began in Spring 2021 with support from Brechje Maréchal, SEE-Programme Manager, and Andre de Brouwer, from Campus Facility Management responsible for maintaining UT's green spaces.

The aim was to give more students (and other UT community members) the chance to experience growing your own vegetables and fruits. The initial plan was to have 10 boxes, each managed by two students. The Community Garden project started properly in July 2021 and is planned to be long-term, while slowly growing based on demand.

In June 2020, the first six boxes were placed at the location of the Biologische Tuinvereniging Drienerlo (BTD) on the campus. We expect the other 4-9 boxes to be delivered early spring 2022. As of July 2021, there are 13 active participants in the gardening project that manage the boxes together. 5 boxes are divided over the participants, 1 box is shared. The participants can learn

from each other, from the other participants, and from other gardeners at the BTD, on which land the square meter boxes are located.

The initial idea was that one member of SUSTAIN and one member of GHT would be responsible for the boxes. GHT would focus more on the financial and communication aspects and SUSTAIN would focus more on day-to-day activities (like making sure that everyone cleans their boxes). In July 2021, SUSTAIN was still busy with gaining more members for their board, so GHT took both of these roles.

One Green Hub officer was an official member of the Biologische Tuinvereniging Drienerlo, which allows us to have access to the tool shed. This should be maintained, especially the relationship with Henny Kramers-Pals is a BTD member who is also the garden coach, and she is very helpful in showing us around, teaching us how to grow specific crops, and share plant seeds. She is willing to help us out with information, demonstrating, and providing seeds of various vegetables.

Overall

The Community Garden aims to create awareness about how students can grow their own food, and help students with gaining more knowledge about farming and gardening. This project is really about a vegetable garden for students by students.

Our **short-term goal** of this project is to give as many students as possible the chance to experiment with growing their own food.

Our **long-term goal** is to increase awareness of the origins of our food within the campus/UT community.



Above, top right: Our first fruits
Right: This is Hennie. She is a bit of a legend 😊
Below: Guided tour on campus
Previous page, left: The location of the boxes on campus



4.3.3 OPERATIONS & CONSULTING

Waste Management & Waste Stream Visualisation

During the investigation preceding this report, a core issue with the UT waste management was discovered: **While many types of waste certainly achieve high rates of recycling, residual waste is the real cause of problems.** Making up 56.05% of the overall volume of waste, it is considered unrecyclable and incinerated, preventing reuse, and creating additional emissions. Moreover, the majority of residual waste isn't residual, but poorly separated waste! Estimating a division of residual waste into other waste streams decreases its share to below 20% and significantly raises the yield of other recycled waste streams. See Figure 5 below.

The Green Hub will use these findings to create an environment where students, employees, and visitors can contribute towards a university that makes more use of the resources that our waste can provide. To that end, several infographics and poster designs (see below) were drafted to be used by the Green Hub and other departments. They aim to spread awareness around global and regional waste streams, and to inform the campus community about correct recycling and waste separation practices.

Resident Green Waste Separation

Building on the insights of the waste stream management and visualisation project presented above, the operations portfolio collaborates with De Veste – the provider of student housing on campus – to make green waste separation

possible for campus residents. After conducting a survey among residents to convince stakeholders, it is currently working on getting the pilot project running for the Campuslaan living area.

How to Handle Your Trash

Step 1: Reduce.
Buy long-lasting products with minimal or no packaging to minimize the trash you generate.

Step 2: Reuse.
Think twice before putting an item in the trash. Find another use for it, donate, or sell it.

Step 3: Recycle.
Segregate your trash by type. Contact local recyclers to collect your non-recyclable trash.

Step 4: Make compost.
Gather fruit and vegetable scraps and make a compost pile in your backyard.

Step 5: Dispose trash in a landfill.
Throw trash in a landfill only if you still have trash left after following the other four steps.

Throw trash away responsibly

WASTE STREAMS AT UT - 2019

In the visualisation below, the total waste stream at the UT from 2019 is displayed. The left column represents a different waste stream category and the right hand side shows the waste management process used.

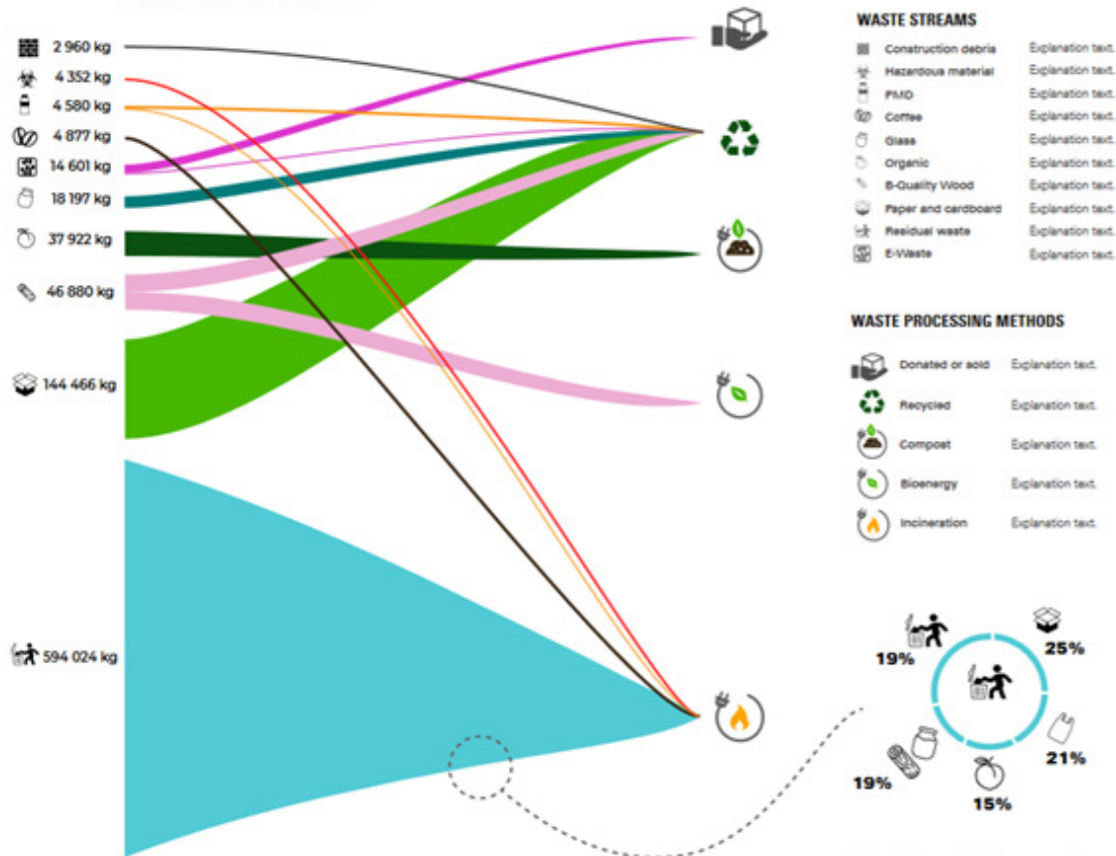


Figure 1: The amount of waste generated at UT in 2019, and how it was processed.

Figure 2: The proportion of waste types that are incorrectly sorted into residual waste stream, and therefore unnecessarily incinerated.

Figure 5: A Waste Stream Visualisation conducted by Green Hub using 2019 Suez Data in cooperation with the SEE-Programme.

Green Certificate: Events

During 2021, the Green Hub worked on and published the Green Certificate for Events. With a special focus on events on campus, it provides a standardised guideline to increase sustainability around a predefined criterion. Organisers can fill in a checklist and receive a certificate that complies with their score. The certificate is further sequenced into five sustainability areas; namely, Communication, Catering, Energy & Transit, and Materials & Waste. A final segment awards sustainability points for creative solutions to sustainability challenges.

The guide and corresponding checklist are added to the permanent resources on the Green Hub's website (<https://www.utwente.nl/en/sustainability/green-hub-twente/more-sustainable/>).

Student Association Sustainability Guide

In cooperation with SUSTAIN, the Green Hub developed and published a guide to help associations become more sustainable. It contains an overview of sustainability at the UT and concrete steps they can take. The plan is published prominently on the Green Hub's website and was shared with many associations (<https://www.utwente.nl/en/sustainability/green-hub-twente/more-sustainable/>).

To realise the UT's sustainability policies, it is necessary to create a bottom-up movement for sustainability within the community, instead of relying on the enforcement of regulations and policy-making alone.

Making aggregated knowledge on sustainability applicable and accessible via guides is a lasting and reliable way to equip other organisations with the resources they need to decrease their environmental impact. Additionally, as major actors in student lives, associations do not simply produce waste and consume energy, but are also important in shaping the awareness and priorities of their members. Their events, programmes, and offers are an important anchor for academic values and student networks.

This plan delivers on the GH's mission to become the central point where all knowledge and initiatives related to sustainability within the university converge and reinforce each other. Build around the four principles:

1. Reduce your consumption.
2. Reuse what you consume where possible.
3. Recycle what you cannot reuse.
4. Compensate for the emissions you cause.

It provides a concise action plan for associations that want to decrease their environmental footprint. Moreover, there are concrete examples and starting points along eleven themes, matching the UT's Sustainability Policy (Communication, Energy, Water, Waste, Food & drinks, Travel & mobility, Biodiversity, Buildings, Events, Finance, Materials).

During this cooperation, the portfolio drafted a list of (sustainable) associations for future cooperation, including a contact log to ensure knowledge transaction

Travel Inventorisation

31% of the UT's emissions comes from travel. While the SEE programme has collected data on the travel behaviour of employees (SEE-Programme 2021-2020 Mobility Plan), **no data is available on students yet. That is why the Green Hub plans to gather information about the travel behaviour of students, both individually and by associations, so this can be considered for the university's emission calculations.** This would employ a nuanced survey among student association boards on their frequency and distance, mode, attendance numbers, and reasons to travel. Based on their responses, a supplementary survey will be conducted on individual students to account for travel not included in association activities such as commuting, research related travel, and journeys because of exchange programmes.

Based on the results, individual boards can receive feedback on their traveling behaviour, particularly emissions and alternative modes of mobility.

Further, to make students aware of the (un)sustainability of their travels, the portfolio plans to **adjust the mobility plan of the SEE – originally aimed at university employees – for students to show opportunities for emission savings, cost comparisons, and travel times using the train map drafted by the SEE.**

This project was slowed down due to the irregular mobility behaviour during the Covid-19 pandemic. Conducting the travel assessment now would result in unrepresentative results. It will be picked up once public health regulations are reliably lifted.

Systems Entrepreneurship

In the first half of 2021, before the Portfolio merger, two Student Green Officers worked to inquire and facilitate the entrepreneurial capacity of the UT and its satellites for sustainability transformation. This former portfolio experimented with a new practice concept, integrating systems thinking with entrepreneurship for transformations for sustainability, where entrepreneurs "can intervene at deep leverage points to introduce a dedication to sustainability in innovation systems", called *Systems Entrepreneurship* (Schlaile, Urmetzer, Ehrenberger, & Brewer, 2021). There was a plethora of activities under the systems entrepreneurship portfolio, with many cross-cutting and supporting the work of other portfolios. However, several stand out as steps forward in how the Green Hub is trying to embody systemic change in practice.





The Green Hub's blossoming collaboration with the Kennispark business community symbolically grounded with tree planting and a plaque, March 2021.

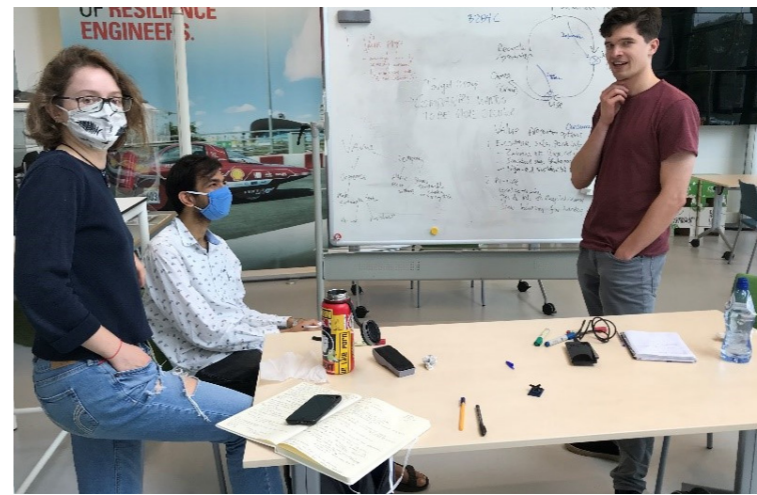
Ties were forged with the Kennispark with March 2021's BoomPlanten Dag where the GreenHub signalled its commitment for supporting local business' transition to sustainability on behalf of the UT, as well as sponsoring the event.

Systems Entrepreneurship officer, Rosan Verbraak lead a Green Hub unit to conduct case study research into the local company 'Twence' and 'ECOR' for the international EU-funded project "Ecosystems' role at upscaling upcycling: a Student-business collaboration project of Scale-up4Sustainability".

Green Hub and DesignLab hosted the final conference for the ScaleUp4Sustainability (S4S) project, bringing students' knowledge into practice by developing new teaching modules in close collaboration with leading enterprises. Green Student Officers worked to research and deliver new concepts to integrate ecological thinking in business and education and green venturing more broadly.



Final Consortium Group Photo, ScaleUp4Sustainability (<https://www.scaleup4sustainability.eu/>), 21st October 2021.



Circular Challenge July 2021: connecting business with students' ingenuity on specific challenges to do with circular business models. With Ecor and Impulse as company participants.

On September 29th, as part of the Plenary Session for Honours Students at the UT, four Student Green Officers and the Coordinator gave a coupled talk and workshop on 'The How of Systemic Change: Sustainability Intelligence for Therapeutically Transforming our World'. Dozens of honours students enjoyed a lively workshop in Strong Sustainability and 'Systems Entrepreneurship', in which core nested models of sustainability were shared and student teams were pitted against each other to come up with innovative sustainability start-up solutions. **A successful, fun and impactful event had by all, as can be seen below.**

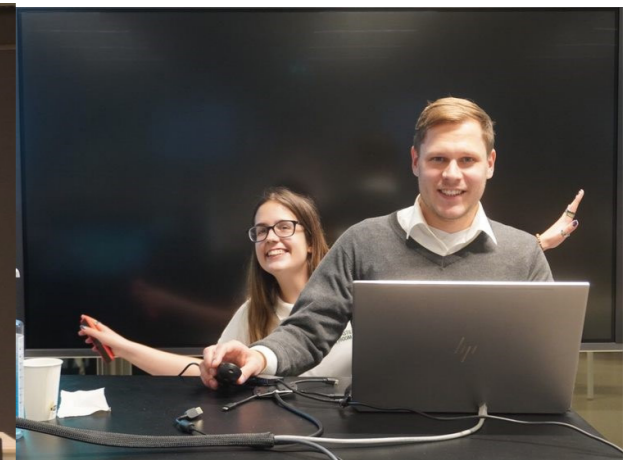


4.3.4 SPECIALISED SUPPORT Project Support

The support team's task is to aid the core team officers in their projects and internal tasks. Especially the design officer often works on the visualisation and realisation of many ongoing projects in close coordination with the marketing portfolio. Another significant contribution is made by the UX/UI support officer as the core responsible for the CSIP

Website Management

Additionally, the operation, updating, and graphic presentation of the Green Hub website is part of support team responsibilities. This includes curating and uploading new guides, reports, and subdomains for finalised projects.



5. GOVERNANCE, STRATEGY & ACCOUNTABILITY

It is imperative that we practice what we preach at the Green Hub Twente because we are trying to build a new organisational (culture) inside an existing one. This closing section aims to share how we worked to instil good systems of governance and accountability within our own organisation, as well as how we nudge and impact these structures in the university around us. We also acknowledge that we may not be able to fulfil both intrinsic and extrinsic functions simultaneously and might indeed have to focus on ourselves first to better impact our surroundings.

OUR OWN ORGANISATION

The coordinator, whilst in effect working as the 'CEO' for Green Hub, is both the leader and guide for all the student Green Officers working on their various projects, and the navigator of change in the wider system that also presents the face for the Green Hub's mission and vision. The responsibility for these multiple roles is therefore very high. As a result, the coordinator invested significant time in 2021 learning how to practice transformative leadership² - see *Tomas Chamorro-Premuzic (2019)* - and taking leadership courses to ensure he was best able to be present, temperate, supportive, and where the situation justified, directive and executive.

Nonetheless, significant limitations and risks exist in having several roles and growing responsibilities in one position. When some structures of the hierarchical organisation that the UT consists of placed an extra burden on the HR and hiring processes of the Green Hub in 2021, the coordinator's role to support and lead the team was significantly jeopardised, as was his ability to play the role of sustainability transformation advisor in the wider UT. In connection to the hiring of the new Project Portfolio Manager, which was itself a formidable challenge, such problems place a barrier on the ability of the management in the Green Hub to perform to the best of their ability, and in a way that places the team and the community at the centre of the aspired impact of the Green Hub. Core officers that needed more guidance and supervision therefore were not paid enough attention by the coordinator, and we are suffering the consequences of this at the time of writing. The mistake was not to have asked for help sooner.



THE UNIVERSITY OF TWENTE

To be accountable is to openly share problems regardless of how bad they make us, or others look. Failures are just as important to learn from, if not more so, than our successes, which is also part of scientific rigour. We share this here as a journal of record, an example for all future reporting, and as a retrospective justification for the lobbying and advocacy for substantive and structural transformation of the organisational infrastructure of the UT, so that it can truly meet its sustainability commitments and respond to the community's recent calls to action.

Unsustainability affects everything we do. Transforming organised human life logically requires a systemic perspective as resolving the system's flaws at the root does not neatly fit into any one operational box. When we talk about transformation for sustainability, we mean a fundamental change in how we operate and organise ourselves so that we can reign in the extent to which we have infringed on planetary boundaries. This is evidently not comfortable, and hard for many of us to even think about or accept. This is also why we stress the need for effective and compassionate leadership that tries to balance and temper the negative implications of the transformation we need. Understandably this cannot be something that the Green Hub alone does.

We are sure that the Executive of this university have heard this call and are processing, with the various committees and working groups under them, how they should best act in response. **Their agency in this process from the top-down is just as important, and indeed, should ideally be in balance with our facilitation of the transformative agency of the sustainability community in Twente from the bottom-up.**

We are the roots, the forest floor; the leadership are the canopy. Both essential and interconnected parts of a thriving ecosystem.

We trust that they are open to building a relationship to collaboratively manage the transformation that needs to take place, and their role in guiding this. We conclude above that the Green Hub cannot lead or direct this change. We can advise, inform, and connect, and in so doing, help to navigate a tailored pathway of systemic change to be inclusive of the community we have witnessed this last year. But the big, hairy, polemic decisions should still come down to the Board. Or at least some kind of representatively elected Commission that guides and advises on such decisions, with the competence, training, knowledge and experience of sustainability science and management that such a governance structure requires. Indeed, we foresee new and coherent governance structures for sustainability being essential to this process and look forward to supporting this into being.

Yours faithfully and sincerely,

Green Hub Twente

REFERENCES

Chamorro-Premuzic, T. (2019). *Why do so many incompetent men become leaders?:(And how to fix it)*: Harvard Business Press.

Schlaile, M. P., Urmetzer, S., Ehrenberger, M. B., & Brewer, J. (2021). Systems entrepreneurship: a conceptual substantiation of a novel entrepreneurial "species". *Sustainability Science*, 16(3), 781-794.



